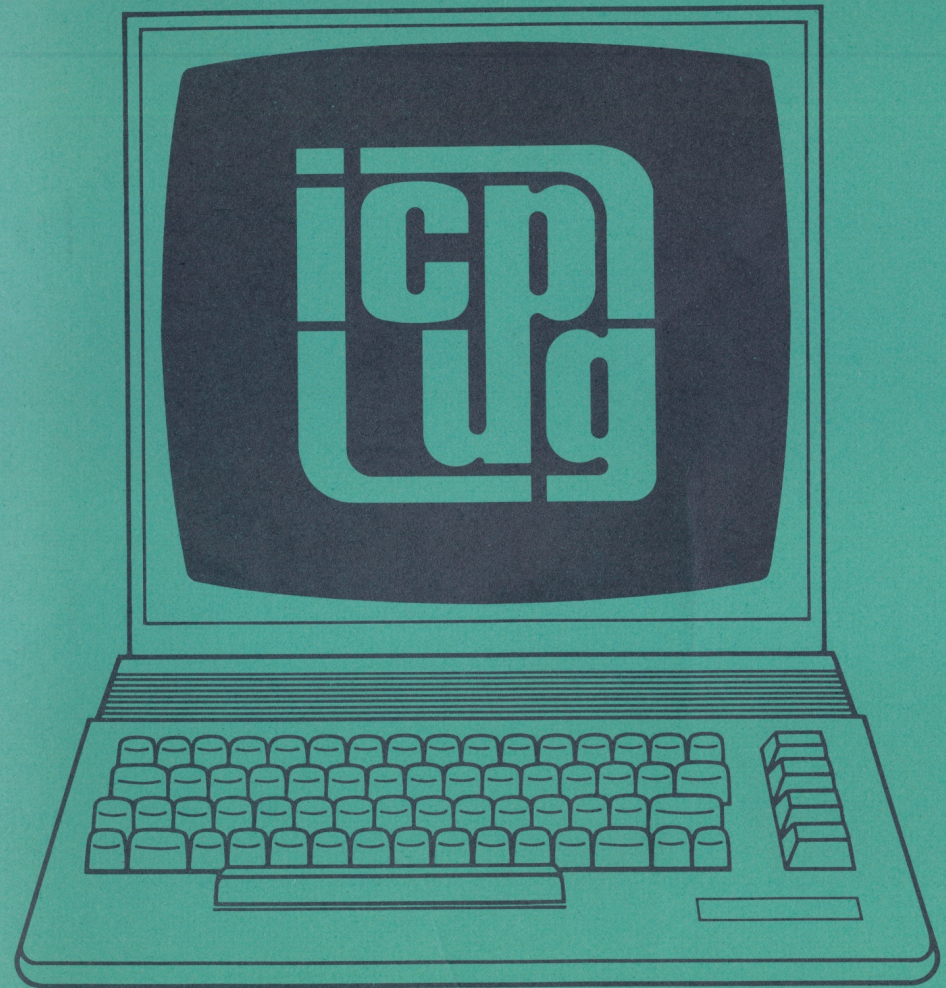


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icpug newsletter

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EDITOR'S NOTEBOOK

Well, the 1989 Grand Prix season is over; the Christmas lights are up in Regent Street; the chestnut roasters are roasting their chestnuts; the carol singers are... well, you get the idea. Another year is over. Looking back on my first year of Editorial encumbancy and 584 pages of top class materiel, I can say it has certainly been an experience. I hope you have enjoyed reading them as much as I have enjoyed putting them together.

The most significant milestone has been moving to the Amiga from the 128. Vizawrite has its devotees, but after trying to produce a 104 page magazine with it, I wasn't one of them. Protext, the new system, on which this is the second issue) makes life a lot easier but is still far from perfect. The rumoured V4.3 may fix some of the problems.

We, the editors are constantly striving to improve the Journal / Newsletter / Magazine / Iliad, all of which this august organ have been called (I think I prefer Iliad [a tale of woes!]). Looking back over the past few years you can see, for example, the changeover to laser printing, and the adjustments in style that resulted. Further exciting changes are also in the pipeline. The new word processor also means that many of the restrictions previously placed on material being submitted have now been lifted. A new style guide is in the process of being written, and will be published in the next issue. It will also be sent out to all our regular contributors.

It may be appropriate to give you some idea of how the Journal is put together. When your material arrives, the article is copied onto my hard drive via a variety of routes; Amiga disks are simply copied, PC 3½" disks are copied using D2D or CrossDos, 360K disks are copied using AWRITE from the bridgeboard and 1541 disks are copied from a 1571 using Access 64. (As an aside, do NOT use shifted characters in your file names, since I will not be able to access the file.)

Once all the material has been edited, it is collated into some kind of order. At this point a number of articles will be removed to achieve the required length. This is then read by a number of proof readers, who correct any spelling, grammar or factual errors that were missed. Finally it is sent to the printer, who produces what you have in your hand.

Finally, the copy deadline for the first issue next year is January 13th. The remaining deadlines will be the first Saturday of odd months. Anyway, have a happy Christmas and a prosperous new year.

TWA

CHAIRMAN'S CHATTER ON THE MOVE

by John Bickerstaff

At the end of our eleventh year the committee and your many helpers bring you glad yuletide tidings as we go forward to the last decade of this 20th century. We trust that you will have an enjoyable Christmas and that you will enjoy a prosperous 1990.

Commodore have just announced to the world their PC-50-II compatible series machines. The PC-50-II series have been designed around the 80386SX (Intel) processor and are VGA-compatible machines. They fill the gap between the PC40 and the PC60 series. Initially there will be three configurations available. The first unit has a single 3.5 inch floppy and five expansion slots retailing at £2095. The next has a 10MB hard disk and the top model comes with a 100MB hard disk (these are priced at £2395 for the 10MB and £3095 for the 100MB unit). The two top models have four slots and all models come with 1MB of RAM, which can be expanded to 16MB on board. It is expected that other models will be launched within the next six months. These are likely to include a lap top PC and the next in the Amiga series (an A3000 or A4000 perhaps).

Oh Dear! Mr. Postman

Unfortunately there have been more instances of losses and delays in the postal system. However, there have been few losses (that we know of) during the last few weeks and most items have been received within two or three working days of despatch. We did have to wait for one disk (sent first class from the Sutton Area to Croydon) from Saturday to the following Thursday. Because this disk was needed urgently for inclusion into a regional newsletter the sender made a special journey by car to ensure that the 'publish by' date was kept. Similar problems were experienced with some small articles for the previous edition of this Journal. When the despatch area Post Office had considered our complaint (made on their form P58) they admitted that they were unable to account for the loss pointing out that their offices dealt with some 45 million letters and packages each day. They added their apologies for any inconvenience caused.

Binders for this Journal - latest news.

Quite a few more members have kindly written to say that they would be

prepared to purchase ICPUG binders should we receive sufficient support. At the time of writing we have not quite reached the magic figure of 100. Since we need to invest a sum well in excess of £500 for the binders, to which the cost of packing and postage has to be added, we are not yet able to proceed. Once the minimum number has been reached we will re-confirm the cost of production, packing and postage. Therefore I hope to be able to bring to your notice in the next issue news to the effect that the proposal can go ahead. At that time we shall be able to check from our records that those who have already confirmed their wish to purchase are members for 1990. I would like to thank all members who have already written advising of their wish to purchase. Please note that the cost is based on the minimum quantity of 100, the next price break is 250 and we are a very long way away from that figure. Magazines with much larger circulations than ours can make a purchase on much larger quantities and therefore make smaller charges to purchasers. Thank you all for your interest. (See 'Stop Press' on page 557.)

Commodore strike again

Advertising in this journal is strictly limited to a maximum of 10 percent in any issue. Such advertisements that do appear are accepted on the basis that these are generally to the greater benefit of the members. Imagine our disappointment to learn that a full page requested by Commodore was cancelled, by their publicity agents, on the very day issue 5 was being assembled (the day before the finished artwork was despatched to the printer). This caused frantic efforts by the team carrying out the proof reading to move and fill this area in order that the deadline could be kept. We were very concerned that the benefits of this proposed Commodore advertisement be made available to the membership. Consequently, and after much discussion with senior members of Commodore UK, it was agreed that a mailshot would be effected directly from Maidenhead. We trust that you will all have received this special offer for discounted entrance fee for the November Commodore Show at the Novotel.

What Communications?

At the time of writing this article, the Editor has received a number of offers to write either one or a series of articles about communications. A member of the South Western Group has also advised that there is an ICPUG SIG within the Satellite (SW) BBS which runs 24 hours on 0392 (Exeter) 53116. This area is run by Giles Warham of the SW Group.

ROUGH GUIDE TO FILES ON THE MOVE

by Stephen Hardcastle

Using the rule 'Provide the means of doing something first - then find a use for it', I decided to have text files held on disk in my desk-bound 128D with me while on the move. With a rough idea on how to achieve this I bought a Cambridge Computers Z88 with a 128K RAM pack and mains adapter. The two aims were to save Z88 files on disk in case of battery failure and to be able to transfer files freely between the Z88 and 128D.

First the hardware. The Z88 comes with an RS232 serial port so I bought an RS232 interface from Brain Boxes (£51.51 with ICPUG discount). The interface comes with a 25 pin plug but Brain Boxes will provide it with the 9 pin plug required. They will also wire the plug to order if you are not confident in wiring it yourself. After several attempts I decided to connect it using the wiring for a Z88 to PC link. The 9 Pin D connector may require modification to enable connection to the Z88. Removing the 2 securing screws and re-positioning the outer case should suffice.

The wiring diagram for the RS232 interface terminating in a 9 pin D male connector (all the DIP switches set to off).

Pin 1	-----	no connection
Pin 2	-----	RXD
Pin 3	-----	TXD
Pin 4	-----	CTS
Pin 5	-----	
	-----	DTR
Pin 8	-----	
Pin 6	-----	no connection
Pin 7	-----	GND
Pin 9	-----	no connection
	-----	RTS
	-----	DSR
	-----	(RTS, DSR, DCD are joined)
	-----	DCD

Second the software. Brain Boxes recommended BobsTerm Pro 128 from Precision Software (£24.95 with ICPUG discount), the program can be copied onto a work disk but will only run with the dongle provided. Please note that

BobsTerm Pro for the Commodore 128 only works with an 80 column monitor and disk drive. There are also suitable programs in the ICPUG library.

The remote mode of BobsTerm Pro sets the 128 to act as a Mini Bulletin Board, this enables the Z88 to take control of the 128 disk drive. Once the connection is made all the commands are entered on the Z88 keyboard, most of the screen output will appear on the Z88. However the display on the 128 provides more information on the progress of data transfer.

The following parameters need to be set in BobsTerm Pro.

RS232	8	Word bits
	1	Stop bit
	NO	Parity
	300	Baud
	Full	Duplex

Modem	Type	Mitey-Mo / Hes-II
-------	------	-------------------

Terminal	Type	VT-52
----------	------	-------

The Z88 comes with the required terminal software in ROM and the necessary adjustments can be made from the PANEL. A special printer driver is also required and this can be created using the built in PrinterEd.

Set up details for Z88

Panel	Transmit baud rate	300
	Receive baud rate	300
	Parity	None
	Xon/Xoff	Yes

PrinterEd	Enter the printer editor
	Name a printer definition 'c128'
	Remove all information leaving all entries blank
	Then set 'Allow line feed' to 'Yes'
	Save definition file
	Install printer definition

To transfer a Superscript 128 file to the Z88.

1. From within Superscript 128 save the file to be transferred to the BobsTerm Pro work disk.
2. Connect Z88 to 128 using RS232 lead.
3. Boot BobsTerm Pro 128.
4. On Z88 enter terminal (Square V).
5. From within BobsTerm Pro 128 select Remote mode.
6. The Z88 screen should now display the command line select Download, then Control Code.
7. When prompted enter name of file to be transferred. The Message 'press return to begin' should be displayed -DO NOT PRESS RETURN-.
8. On Z88 enter Import/Export use Square X -DO NOT USE SHIFT/ENTER-
9. Type R to receive file and enter the name you want the transferred file to be called on the Z88.
10. The progress of the data transfer can be observed on the 128 screen, and by the line number display on the Z88.
11. The end of data transfer will be shown by the message 'Transfer Complete' on the 128 screen.
12. When transfer is complete, on the Z88 press ESCape and then return to the Terminal (Square V).
13. Pressing ENTER should display the command line once more. If pressing ENTER has no effect then leave terminal with SHIFT/ENTER and then re-enter with Square V. Pressing ENTER will now display the command line.

Loading the transferred file into Pipedream is the same as any other Z88 file. However the file will appear in one slot, normally only the first few characters of a paragraph will be in view. To view the file set the slot width to the number of characters that suit the width of the text transferred (Diamond W). If the text overflows the screen width you can reformat each paragraph in the file (Diamond R).

To transfer a Z88 file to Superscript 128.

1. Connect Z88 to 128 using RS232 lead.
2. Boot BobsTerm Pro 128.
3. On Z88 enter terminal (Square V).
5. From within BobsTerm Pro 128 select Remote mode.
6. The Z88 screen should now display the command line, select Upload, then Control Code.

7. When prompted enter name you want the transferred file to be called on disk (If a file of that name exists then you will be asked if you wish REPLACE the old file).
8. When a disk file has been opened the screen will display the message PROTOCOL ENGAGED. At this point you must send a DC1 character from the Z88 to the 128. This is done by pressing the 'DIAMOND' key then the 'R' key.
9. On the Z88 use the INDEX key to leave the Terminal (do not use SHIFT/ENTER).
10. Enter the pipedream document to be sent to the 128.
11. Using the special printer definition, PRINT the document. The Data transfer can be seen on the 128 screen.
12. When the transfer is complete, on the Z88 enter the terminal (Square V) and send a DC2 character to close the disk file. This is done by pressing the 'DIAMOND' key and then the 'T' key.
13. When the file save is complete press 'ENTER' and the screen will display the command line.

To save a Z88 file to Disk on the 128D.

1. Connect Z88 to 128D using RS232 lead.
2. Boot BobsTerm Pro 128.
3. On Z88 enter the terminal (Square V).
5. From within BobsTerm Pro 128 select Remote mode.
6. The Z88 screen should now display the command line, select Upload, then Control Code.
7. When prompted enter name you wish the transferred file to be called on the disk (if a file of that name exists then you will be asked if you wish REPLACE it).
8. When a disk file has been opened the screen will display the message PROTOCOL ENGAGED. At this point you must send a DC1 character from the Z88 to the 128. This is done by pressing the 'DIAMOND' key then the 'R' key.
9. On the Z88 enter the Import/Export, use 'Square X' to leave the Terminal (do not use SHIFT/ENTER).
10. Press S to send file, then enter the name of the file in the Z88 which is to be sent to the 128.
11. The progress of the transfer will be shown by the line number display on the Z88, and on the 128 screen.
12. When the transfer is complete the Import/Export command line will be

displayed on the Z88.

13. Re-enter the Terminal on the Z88 (Square V). Then send a DC2 character with 'Diamond and T'.
14. Press Enter to display the Command line once more

To restore a file from disk to the Z88.

1. Connect Z88 to 128D using RS232 lead.
2. Boot BobsTerm Pro 128.
3. On Z88 enter the terminal (Square V).
5. From within BobsTerm Pro 128 select Remote mode.
6. The Z88 screen should now display the command line, select Download, then Control Code.
7. When prompted enter the name of the file on disk, to be transferred to the Z88.
8. The screen will now display the message 'Press return to begin' -DO NOT PRESS RETURN-
9. Leave the Terminal and enter the import/export (Square X).
10. Type R to receive file then enter the name you wish the transferred file to be called on the Z88.
11. Progress can be seen on the 128 screen or by the line number display on the Z88.
12. When transfer is complete the message 'end of file' will be displayed on the Z88 along with the command line.
13. Return to the Terminal (Square V) and press ENTER to display the command line.

It works and the two main objectives are achieved, all be it with a lot of fiddly commands to remember. However, despite all attempts I have still not successfully transferred a pound sign. [Anyone ever managed this? - Ed]

It is easy to make mistakes in the instructions required to successfully transfer a file. However the system works and does provide a practical method of having files entered on the Commodore available on the move.

These notes can only be regarded as a rough guide and the software used may not be readily available. However, experimenting with the commands available will, I have no doubt, produce a much simpler method of achieving the required goals. Please do not attempt such a project unless you have a clear understanding of the risks involved. An excellent book which covers this topic is Z88 Computing by Ian Sinclair ISBN 1-85346-045-1.

SUPER * CORNER

edited by Brian Fowler

You may recall that last time I mentioned a suite of programs developed by Derek Tilford. Derek has kindly sent me a copy of his disk, for which I thank him. I have not as yet had time to thoroughly explore his application, but my first impressions are that it could be an extremely useful addition to any SuperBaser's armoury. More on this next time.

Wizard of OZ

Many readers will know of Paul Blair, who has contributed many useful Super* snippets in the past. Paul has sent me a disk containing some of his work, and although some of the items may have been aired in previous Newsletters, I think it would be useful to reproduce his offerings in a "mini series" within these pages. Many thanks to Paul for the following, which deal with the 8bit product ...

THE SUPER * PAGE 65

by Paul Blair

Firstly, a bit of history. If you drive a C64/128, then skip down a bit. This is for those of you who can remember.

A few words for users of the CBM 600/700/B128 (B128 = B500 in the UK!). Hands up who knew such things existed? Oh. If your hand is still down, I will say briefly that these brilliant machines were the half-way design between the original PET and the C128 of today. Eight bit, eighty column, 256K RAM if you wanted (I don't recall if anyone got to 512K). They weren't released in Australia when the rest of the world got them. But then Commodore Australia had an auction and more than 50 machines were sold. And enquiries about Superbase, Superscript and the combination of these, Superoffice, coming in from time to time.

There were 2 versions of the 600/700/B128, known as "old ROM" and "new ROM". No-one seems to know what was sold here, but there are some checks you can make. To run Super*, you need NEW ROMs.

OK. Power on, type SYS 11 <RETURN> (CR from now on.) This should give:

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PC IRQ SR AC XR YR SP
000D FBE9 B1 FA 71 0B FB

Now, type M 0000 <CR>, and you could get:

```
0000 0F 0F 4C A7 9B 00 00 00 00 00 00 00 00 00 9E 00
```

There are 9 "00" bytes in a bunch. If you get LESS, you have OLD ROMs.

If OK, type X <CR>. The screen should go to the READY prompt. If not, you have OLD ROMs. If the system says "PRESS PLAY ON TAPE", you have OLD ROMs.

Reset the computer. Enter this program.

```
10 PRINT"[OFF/RVS] ":"GOTO 10 <CR>
```

That is, the OFF/RVS key followed by a space, inside quotes.

Type RUN <CR>. The screen should have an even, continuous pattern, with the bottom line the only clue that the screen is scrolling up. If not, you have OLD ROMs.

There's nothing wrong with old ROMs, except that Precision Software won't work with them. If this is the case, go pester CBM for a set (3 chips) of the NEW ROMs. Then, and only then, can the joys of SUPER* be yours.

If the Superscript folk are ready, let's talk to them. The Superbase folk may as well stay around, because I want to cover the most troublesome aspect (if I can believe my mail) - mail merge, using data from Superbase to prepare form letters with Superscript. The technique is the same, regardless of which computer you are using.

As the documentation tells us (it told me - haven't you read it yet?), a mail merge is where you wish to send a general letter to different people, but with personal touches or specific inclusions. Say you run a repair business, using Superbase (SB) to keep track of work. Each month you want to write or send an account to each slow payer. You want the account to contain the laggards name, address, the job you did and how much is owed. Each may have a different time to pay - maybe 30, 60 and 90 days. If there are 15 accounts, then you want 15 letters.

The trick is to have SB write a file with the specific details for each customer. That information is then read into a "form" (translation: all the same) letter that has been specially created in Superscript (SS) with "blanks" (call them that for now) where the data has to be put in.

The project has three stages:

1. Creation of a "fill" or "sequential" file from SB, containing the necessary data.
2. Writing a letter with the blanks where the data is to go.
3. Doing the mail merge.

From SB, you can use "fill" to set up the fill file. All raw data must be in one file in the SB database. Check which fields you want to use, and write down their names. Use "Status" (Menu 2, F6 then F1) if you are unsure.

Check that there is sufficient space on the disk to hold the fill file. Remember that fill files are not usually compacted. Use the "Output" command as the manual shows you:

```
output all fill to "filexxx" [field1][field2][ etc....
```

The output fields can be in any order, you don't have to use the order they show up on the screen.

The file "filexxx" will contain as many fields per record as you specify, with empty fields being stored as a blank line. As well, one extra line is written to separate records from each other. So if you want 5 fields written, remember that each record on disk will contain 6 lines. This has to be taken care of in the form letter.

That's the end of Stage 1. Now, Stage 2.

Setting up the letter is well described in the manual tutorial, and I don't plan to go over that part of the job. But be careful about that extra blank line that SB has put between records. We have to use it somehow, or our pattern of names, amounts and so on will get out of kilter. We have to use up 6 lines in each letter, 5 lines of useful stuff and one junk line. The way to do this is to put a dummy block in the letter somewhere it doesn't matter. The easiest way I have come across is to set a dummy block in a comment line at the END of the document:

```
*cm: this is a dummy block [ ] or
```

```
*nb: this is a dummy block < >
```

Don't put it up the front of the letter, because the blank line you want to absorb comes AFTER the useful stuff in the record.

The rest is easy. Stage 3 is simply printing the form letter, and that's

doing what comes naturally. Refer to the manual if you get stuck.

A couple of points. I like to check my fill files (prefix them "h" or "h8" if you want to use the SB "Help" function). As well as using SB, I can edit them with SS should the need arise. But I have to remember that only a finite number of lines can fit into SS memory, so I must keep my fill file under that limit if I want to edit it. And whatever you do, don't put a file name at the top of a fill file, no matter how tidy you like to be.

Some bright lad just figured it out. If you can take data from SB to SS, why not the reverse process? Good one.

This is an excellent way of entering raw data with minimum time at the keyboard. Anyone who can type with from 2 to 10 fingers can usually use this technique to advantage.

To reuse our previous example, by writing 5 lines per record, we could insert information back into SB. Each block of 5 lines would have to have the identical order of information to all other blocks. Some other rules have to be observed if you want to make it work for you. These are:

1. No line of the SS document should be longer than the SB field where the information is to go.
2. The overall length of each "record" (our 5 lines here) must not exceed the capacity of the record in the database.
3. Check disk space. You need room for the SS file and the records in the database.
4. Each line must end with a carriage return.
5. No junk. Only information. Cut out comments, formatting commands and so on.
6. If your database is set for "unique" keys, watch out for any key field duplicates.
7. You don't need a blank line to separate blocks (records).

To import the data into SB from the document, set up a SB format to correspond with the way you have structured the SS file. Make ALL fields (except the key) TEXT type. Then, simply "Import", enter the filename, and go have a cuppa.

When moving data either way, take great care with your format. Count lines with the SS screen indicators, know how many items you should have and double-check. It's a pain to have to delete a heap of imported records simply because one line was left out, and things got out of sync. Five minutes checking could save an hour of deleting.

WARNING

It has been reported that there is a small bug in SB (versions unknown, but probably all) that you should be aware of. It probably won't affect more than 1% of you.

If you use "Output" to a disk file, avoid specific truncation. The sort of thing I mean is &6[title] and &3,2[amount]. This will run you out of disk space so fast your eyes will hurt. &[title] is OK, however, which is non-specific truncation. Precision knows of the problem, and a fix is coming.

Letters and sundry grunts

I should tell you of my pleasure at receiving interesting bits and pieces from around the place. Obviously both SS and SB are in the hands of some very creative people, and their inventiveness is unbounded. Mike McWatters (Port Hedland) and Rick Phillips (Perth) are two such writers. Rex Twomey in Sydney showed me his Genealogy program, which continues to grow nicely. These people push me along to try better things, and my grateful thanks go to them for that.

Data disks

What is a data disk? Nothing more than a normally formatted disk. There is some confusion about this, so let's lay the ghost.

Data storage in SB requires only a standard disk, formatted as you would any other disk. If you do this, the total disk is available for storage (but do transfer your START.P file to it) of your data.

The data disk creation request that comes up on the opening screen will also produce a data disk, but it will transfer the HELP files to the new disk. That's the difference. So, if you want HELP on line, do it as SB suggests.

The reason for moving START.P to the data disk you create is so you can insert your data disk as soon as the SB screen prompts at power up. That way, there is no time wasted logging the data disk into use.

You can also backup a SB disk as you would any other disk, provided the backup utility you use makes a photo image of the original disk. SB is very keen to keep data in very specific and known places, so if you use a file copier, things will get out of whack. Use a full backup program, and copy the entire disk.

But remember this. The SB Backup does some disk tidying as it goes, and often frees up space that it finds, giving you more room on the disk.

Although SB Backup takes longer, there is value in using it, especially if disk space is at a premium.

(C) 1989 Paul Blair

THE SUPER * PAGE 67

by Paul Blair

This month I plan to go wandering off among a whole lot of useful SB trivia. When you stop laughing, we can start.

Dollars

For all the formatting power that Superbase gives you, it's odd that the humble monetary symbol (dollar, pound, lira etc) is not included in any of the output format commands. Well, that seemed an odd thing, so here is a short way to set up for printing dollar amounts with a leading "\$" sign. This is a sample program that you can adapt (even improve on, maybe) for yourself.

```
10 ask @1,0"amount ";a
20 g$=mid$(str$(a*100),2)
30 if len(g$)<3 then g$="0"+g$:goto 30
40 display @2,0"$"+mid$(g$,1,len(g$)-2)+"."+right$(g$,2)
50 wait:menu
```

Simply change the first "\$" sign in line 40 for Chad mumbles, Transylvanian thrups, or whatever your native currency requires. If you have a neater way (please!), share it with us.

Printers

The next routine derived from a query that came from Mike McWatters of Port Hedland - how to detect if the printer is on or off. After some playing around, I came up with:

```
10 trap 40
20 print"error"
30 across:wait:menu
40 if er=105 then display @1,1"Turn the printer on, please"
50 wait:goto10
```

Well, its not glamorous, but it does work on the C=128. The "er" value came from doing it, then checking the value the computer actually got with the serial printer switched off. But 105? Not 5? Does SB somehow like centuries only? Any believable theories? Anyone got a suggestion that works on the C=64?

Dates

More trivia. I got caught with SB's date conversion. Let me explain. I was using Rae West on the 64, page 100. This gives the value 31897 for 1 May 1987. Now, in SB, 01MAY87 is stored as 31898. So I figure that Rae (and Mr Zeller, too) calculate the "number of days since 1.1.1900", while SB uses the actual day number, which is one more. To me, that seems more sensible. Rae's formula needs to have 1 added to it if the results are to be fed into SB. This is an adaptation of Zeller's Congruence, just for you:

```
10 input"date";d,m,y
20 a1=d:a2=m:a3=y
30 a1$="000031059090120151181212243273304334"
40 day=a1+a3*365+int((a3)/4)+val(mid$(a1$,3*a2-2,3))
50 if a2>2 and (1900+a3)/4=int((1900+a3)/4) then day=day+1
60 print day:rem add 1 for SB
```

To judge from my mail, dates (messing about with, reasons why unknown) occupy a lot of you in a heap of work. I confess that I sometimes get a bit impatient with the things that SB would have you do in this regard. However, there are all sorts of routines for dates, and if you want, I could try to explain more about them.

C128 screen underline

There is an odd thing in trying to underline headings on the C128 screen. If I tell SB 'display @10,2 chr\$(2)+"DATE ENTRY VALIDATION", I get an extra underline character after the last letter of the last word. Maybe thats a CBM command problem. To get around it, I put a space inside the quotes before the first word, so there is an underline hanging out at both ends. Maybe I'm doing something else wrong? Again, have you found a solution?

Memo

A few words about MEMO. I stumbled on the value of this one by accident. The story goes that I was doing some SB programming which was to be used by a normal citizen, i.e., one having no computer literacy. If he reads this, then Paul will get torched.

I wanted to provide him with an opening screen that would help him recall what things he had to do, and in which order. There were only three actions, but I preferred not to take the chance on his getting the sequence wrong. I hate unclagging disks at midnight, and will go to great lengths to avoid the situation.

The logical thing was to write some "SB BASIC" in the 'START.P' program - you know, the system setter-upper file that SB loads as soon as it comes alive. If you haven't found out about 'START.P', then I suggest you cuddle up to your instruction manual for a while and find out. It's all explained there. The idea of putting the wisdom into 'START.P' would be to make sure the user couldn't escape at least seeing the instructions. But that seemed too much work, and I'm just a bit lazy.

MEMO is a simple text editor that can be used to write a screen "page". The page can then be called up to be read. SB is not disturbed by your recalling the screen page, and it is a useful (albeit limited) feature that I suspect is little used. It was probably included in SB so the HELP screens could be written. In fact, the HELP screens are only MEMOs, with one extra feature - the ability to quit the screen display easily, and go back to what you were doing. But I'm getting ahead of myself.

The F7 MENU option is explained in the instructions, but in effect you can write a new screen (or screens - up to 4, in fact), or recall and read or edit an old one. The top screen line will ask you for a screen (or MEMO) name. If SB finds it, it will be displayed on the screen. If not, the screen is cleared and you can write one. That's all very simple.

But how to integrate all this with my program? Say I created a screen named "gday", and wrote a MEMO. In my 'START.P' program, I could then include a line like:

```
10 memo "gday":wait
```

and the darn thing would load "gday" alright, but then I would have to press some esoteric combination of keys to carry on. That's just too fussy - I want to press only one key for more action. But as I said before, the HELP function is better, because pressing any key quits the screen, and matters

proceed from where they left off.

So, if instead of "gday", I named it "hgday" (for 40 column screens) or "h8gday", then my program line could become:

```
10 help "h8gday":wait
```

and the screen would pop up for me. As a bonus, the command line would prompt me to whack a key to go on. Problem solved.

Before you get too delirious, a caution or two. MEMO is probably the simplest screen writer ever devised. Only the screen display is captured - no colour or special features (flash on, underline, etc). The returning screen will be one colour only. If you include the limited SB graphics, they will work. If you want the flashing lights bit, then you will have to write a PROG to do it, or go on back to 'START.P' and do it there.

Spare fields

When you are designing a new database or file, consider adding an extra field into the format as the last field. Call it something inconsequential, like [dummy] or [spare]. There is a reason for including the extra field.

The best explanation is an example. Say you have a field like [name], which contains "R T BROWN", initials and surname in this case. Now, you would like to reformat the output on the fly, but still use the powerful SB '&' and '@' formatting/layout features. The simple thing to do is to slice off part of one field and temporarily call it another. So, if `a$=left$([name],3)` and `[spare]=a$`, then you can use '&' and '@' with [spare].

That's a very simple example, just to help grasp the concept. The extra field should not run you out of disk space, because SB will only store a carriage return if the field is empty. One extra byte shouldn't break the bank.

Here's a more useful example - to extract record details for a particular month, and generate a key list of the appropriate records. The author is not known.

```
10 ask "Which month"b$:date"01"+b$+"87",a:if a=0 then 10
20 select f
30 convert [date],a$
40 a$=mid$(a$,3,3)
50 if a$=b$ then calc [spare] = "1": store
60 eof goto 100
70 select n: goto 30
```



```

100 find "" where [spare] is "=1"
110 batch all [spare] = ""
120 menu

```

If you only want to store a "flag" or suchlike, then you can format the extra field to be only one character in length. But if you can to do something like the first example, remember to make the field of sufficient length. Again, if it is not used, only one additional byte is stored on disk.

Export/Fill

This bit you shouldn't miss. It's vital. Well.... Files written out to disk are used by many people to do things outside the structure of SB. I use them often to overcome SB's woeful print speed, and to twiddle data for my own purposes (sometimes to enter into other SB databases).

There are different ways of writing files - EXPORT is used to recreate and tidy up files, FILL is used for mail merge, and so on. There is a difference in the way SB writes such files. I won't discourse too long on the matter, but here are some examples (printed as a disk utility would show you - in hexadecimal notation):

Export (E) and Fill (F) disk storage

(ordinary text field)

```

A D A M B M
E: C1 C4 C1 CD D3 20 20 20 20 20 C2 20 CD 20 0D
F: C1 C4 C1 CD D3 20 20 20 20 20 C2 20 CD 0D

```

(empty text field)

```

E: 20 0D
F: 0D

```

(empty date field)

```

E: 0D
F: 30 30 CA C1 CE 30 30 0D (which is 00JAN00)

```

(empty numeric field)

```

E: 0D
F: 20 30 2E 30 30 0D (which is 0.00)

```

As you can see, there are differences - the space (hex 20) in EXPORT files before the carriage return (hex 0D), and date and numeric field variants.

The main point is - look at what you plan to use the disk files for, and

don't assume that all files are created equal. The empty (carriage return only) field in EXPORT files makes use of INPUT# impossible. In fact, EXPORT files are really only of any use for IMPORT to somewhere. Maybe you already knew that, or hadn't thought of being cheeky and trying to save time by using an EXPORT file for mail merge. Save yourself the time. Do it right.

Just a reminder

If you want updates of Precision Software such as Superbase and Superscript for any Commodore model, the best shot is to go direct to the source. Write to:

PRECISION SOFTWARE LTD
6 PARK TERRACE
WORCESTER PARK
SURREY KT4 7JZ
ENGLAND

Prices for upgrades are reasonable, and air mail is quick. My record is eight (8!) elapsed days from the time I posted back a disk.

I know it sounds stupid, but DON'T FORGET to include your name and address. Please.

(C) 1989 Paul Blair

That wraps up Super Corner for this time. I would like to thank all those members who have sent contributions, most of which have been held over until next time. It is interesting to note that 8bit Super users are most prolific - I have received next to nothing from Amiga and PC users. Well, Joe Griffin should be happy, at least.

TEXAS TALES

by Betty Clay

Has it ever seemed to you that the Amiga frequently forces us to make choices when we are not given enough options? Even worse, we have to make choices without being given any information on which to base the choice. This particular problem comes to my attention every time I see one of those system requesters, such as the one that says "Replace Volume XXXX in any drive. Retry or Cancel". If only I were told what the computer needs from that disk, I could copy the needed file to memory or to my Workbench so that the requester and the disk swapping could end. For that requester, I would like to request a report on the name of the file that is needed, and perhaps even a string gadget requester that would let me locate and load the file.

Another favourite candidate for change is "Finish all disk activity. Press CANCEL to continue. Retry or Cancel". Sure! Press that left button on CANCEL and you definitely do NOT continue - you reset the Amiga. But, does it tell you this? Of course not. Perhaps you have twenty programs at work in the machine, many of them doing things you consider vital, but when you follow the instruction in that requester, it is *all* lost. Now, I've been around the Amiga for a while, and I know better than to touch that left mouse button when I see that requester, but pity the poor beginner! When this requester appears, it is possible to go around to every program in progress, save off things that need saving, close down each program properly, and then reboot. It is even possible to work for a half day or more with the requester sitting behind all your windows while you work anywhere that it isn't. Wouldn't it be wonderful if that requester had another choice: Ignore. Then the window could go away, letting you continue to complete the necessary cleanup, and you could do the reboot when it suited your schedule.

All of these things COULD change when we get 1.4. Many, many users are requesting that we be given more information and more choices in requesters for 1.4, and just maybe they will get all they ask for. I'm eager to see.

There is another thing I would like to see in 1.4. We have a "Help" key on our keyboards, and it rarely ever does anyone any good. I would like to see that key utilised. I would like it to respond to a different set of instructions for each window or screen on which we might be working, and to have help for THAT screen available. It should be made to work so that

every software package came with help files on the disk. The operating system itself needs a set of 'help files'. It is impossible for all of us to memorise all of the facts about our machine and about all of the software we use these days. We NEED online help. At the minimum, on-disk help. Let's hope that our HELP key will start to be helpful when we get the new system. (No - no one has even hinted that this will happen. I'm just dreaming.)

Commodore Shows

There was a small, local Commodore show in Arlington on October 14. This show was sponsored by one local club, and was attended by only about five hundred people. It was a great show, all the same. Our featured speaker was Jay Miner, the father of the Amiga. He told us about the early days of designing and building the machine, and of much of the thought that went into the designing of it. He spoke of the people who made the machine, of their hardships when they ran out of money and even mortgaged their homes in order to continue. He told us that the special chipset was designed to handle two megabytes of memory, but that the rest of the computer could not handle that much, so only 512K was addressed by them. We now have the 1M Agnus, and he says it could have addressed 2M had Commodore chosen to do that. With the price of memory dropping so drastically, wouldn't it have been great had Commodore seen fit to increase the amount of memory in the machines they ship, and to allow the full 2M of chip memory for which the chips are designed? Perhaps someday.

Another Commodore-Amiga show was held in Santa Clara, California. This one had the misfortune to happen the same week as the huge earthquake that struck in the same area. The earthquake was on Tuesday afternoon; the show was scheduled to begin on Thursday morning. The sponsors were in a very tough spot. Many of the exhibitors were already there; others had equipment there and were on their way. A call to the hotel and the convention centre brought word that neither was badly damaged and that there would be no refunds should the show be cancelled. So - the show went on! Attendance was a bit sparse, as might be expected. The only real news that has come from the show was an announcement by NewTek. Digiview 4.0 is now ready to ship. The word is that Digiview 4.0 makes pictures with 4096 colours on screen at one time, and that the quality is much higher than from the earlier versions. The upgrade is to be in the software only, and will cost about \$25.

The Santa Clara show focused our attention even more closely on the Amiga people who live in the area. Many of the big software houses are

located right at the site of that earthquake. I am told that people we all know have suffered great loss. Steve Wagh, of the Brown-Wagh company said that almost everything in his house made of glass is gone - the china, crystal, dinnerware, picture frames, lamps - all of it. One side of his house must be replaced, having been condemned by the city. He considers himself fortunate, because no one in his family was injured. His nearest neighbor's house was a total loss, and they were not even allowed to go in and salvage anything that might have survived. Rob Peck's house was about 90% destroyed, according to one report. I am told that Rob and his family had gone out to eat and were away when disaster struck. The Amiga facility at Los Gatos was badly shaken, and things were moved about a bit, but they are running with minimal disruption considering what could have happened. Jay Miner found hairline cracks in one wall of his house, and his prized grandfather clock is a total loss, but he is otherwise in good shape. We have had many reports of hard disks that survived the earthquake without losing a byte of data - miraculous! All in all, considering that large numbers of our most prominent writers and programmers live in the heart of the severely damaged area, things have gone remarkably well.

The computer community did suffer one loss that will be felt, though less so among our folks than among those using Apple and Macintosh computers. John Anderson, 34 years old, has been a well-known writer and editor of computer publications for several years. He was an assistant editor of Creative Computing during the last several years of its publication, and was currently editing a magazine about the Macintosh. John was in one of the buildings that collapsed, and was killed instantly.

Some new products

A number of new software packages have been released lately, and we have updates of others. My WordPerfect update arrived only yesterday. It is just great. I especially like the new requesters, and the setup routine now lets me set a default drive for saving and retrieving work, but with an easy way to change to another directory if I choose. The choices offered now are much, much wider. In my last column, I gave a list of the things that were to be included, and they are all there. After two days of use, I am delighted with this update. None of my files have been incompatible with the new things, and I have not had to re-learn the program. The changes are great enough that an update manual of approximately 50 pages came with the disks. This is the first update for which WordPerfect has charged me, and the cost was only \$12.50. To me, this is remarkably good support.

UltraCard has been released, and many are learning about HyperCard and HyperTalk in order to make better use of this software - supposedly a clone of HyperCard. Another similar product is due for release at the beginning of the month. This one is called CanDo. Both of these are designed to let non-programmers design applications that fit their own needs by just joining together program parts. Perhaps I misunderstand the concept, but it was explained to me that each part (a requester, a single routine, etc.) would be called a 'card', and a set of them is called a 'stack'. People can write new 'cards' if one is not available that does what they want. However, with this software, it is not necessary to sit down and write and compile the code. One simply joins cards together and comes up with an application program. I have seen demonstrations of each of the programs, but have not yet seen anyone put things together to make a new application. I was impressed with the visual aspects of CanDo. I know that it can utilise various requesters, gadgets, buttons, and icons, that it supports sound and speech, and that it is entertaining to watch the demo. If it is really as easy as they say, maybe next time I can send you a CanDo program! Neither of these programs has supported the HyperTalk concept as yet. HyperTalk is a programming language that extends the HyperCard idea even further. It is a plain-English language, easy to learn, I am told. This concept will bear further study, at least for me.

AmigaCOMAL has arrived. I have been in contact with Len Lindsay about it, and have received a copy of a preliminary release, complete with compiler. Unfortunately, Len was out of manuals written in English, and I don't read Danish. So, I am working without a manual until one arrives later this week. My knowledge of COMAL was never great, but I did use it rather often for a year or two. The Amiga BASIC's are all so terrible in one way or another (though quite fine in still other ways) that it has seemed to me that COMAL has an excellent chance of becoming really popular among hobby programmers on this machine. The version I received has hooks for accessing all of the system libraries, it has both an interpreter and a compiler, it is fast, it is easy. I'm sure that Brian Grainger will be telling you far more about COMAL, but I did want to mention that some of us are quite excited that it has arrived here. Len is setting up an area on PeopleLink to support it, and we are working with him to have similar support on CompuServe. He is getting out Issue #25 of COMAL TODAY magazine, and has almost finished writing a new textbook that will cover all of the enhancements available in AmigaCOMAL.

One of the constant questions on the Amiga has concerned the transfer of data between AmigaDOS and MS-DOS. We have had quite a few methods

presented. Forget the ill-fated Transformer, which could have been wonderful had it worked just a little better. We have used null-modem cables to transfer data, but that is very cumbersome and unsatisfactory. Then we were given the PCUtils on the Extras disk, and this was considerably easier, but not always successful. The commercial product DOS-2-DOS, from Central Coast Software, has been the best method until very recently. We now have CROSSDOS. Surely this product is something to shout about! It is all contained in software. There is an msdos.device to put in the devs: directory, a handler to go in the l: directory, and a mountlist entry. With these small files in place on the boot disk, your drives can be mounted as MS-DOS drives - AND as AmigaDOS drives. All at the same time! The drives are given different designations for the different systems; for example, I call the MS-DOS system MF0: and MF1:. For AmigaDos, they remain DF0: and DF1:. If I ask for a directory of MF0:, the drive automatically looks on drive 0 for MS-DOS format and will only read or write to disks that understand that format. A disk in the same drive, but addressed as DF0: will only recognise disks that understand AmigaDOS. The usual AmigaDOS commands work on the MS-DOS disks, for getting directories and the like. The system requires only 80 bytes of room in memory when it is not in use. I have mounted my drives for both systems as part of my startup sequence, so it is always there. This is truly a marvellous thing. If you have any need for transferring between these two systems, surely you will want CROSSDOS. The cost is very reasonable. Suggested retail price is only about \$30. I have seen it as low as \$18 from mail order houses. It is well worth the cost.

1541 -THE FINAL SOLUTION?

by Alan Hoskins

Rather than disembowel a 1541 disk drive which refuses to keep its cool (as suggested recently by Zak Beck), there is a much simpler method of achieving the same end - by the fitting of an internal cooling fan.

Minimal electronic skills are required and these can usually be borrowed if they prove to be beyond one's own capabilities. The cost is minimal too, at under £25.00 in total.

Only two items are required (apart from some connecting wire), these are the fan itself and a voltage regulator. Both items should be easy to obtain, but can be ordered from Electromail, a sister company to RS Components.

I would suggest that before deciding finally on the fitting of a cooling fan, the IC at UD4 (a 74123) is replaced in the first instance, since this seems to improve matters immediately in some cases and may prove to be all that is needed to correct the problem.

If after replacing this chip, the overheating still occurs, the following installation will cure it once and for all - with the added benefit of not having bits of drive spread about your desk!

The fan required is an "Ultraslim" 24 volt d.c. unit (RS stock number 505-482). Also needed is a voltage regulator - I used the LM7815CT, a 15v, 1 amp positive regulator (stock no. 648-444), which, since the current requirements of the fan are small (45mA), does not need to be attached to a heat sink.

You may note that although the fan chosen is rated at 24 volts, the regulator has only a 15 volt output. This is intentional, since the fan will work quite happily at 15 volts, but will run more slowly and thus more quietly. However, it still has more than adequate cooling properties.

Referring to the diagram, the regulator is fitted between points "A" and "B" which is an unregulated 21 volts that appears between the negative end of the 6800 microfarad capacitor (+21v) and the negative end of the 4700 microfarad capacitor (0v or ground). One good point in Commodore's favour is their ability to build more than adequate power supplies.

Point "A" is connected to the regulator by a wire to its input pin (pin 1). The regulator itself is soldered to the circuit board ground at point "B" through pin 2 (the centre pin). The output from the regulator (pin 3) is then connected to the fan positive terminal by means of a further length of wire and the circuit is completed by connecting the negative terminal of the fan back to the ground connection at "B". The regulator pins must be bent

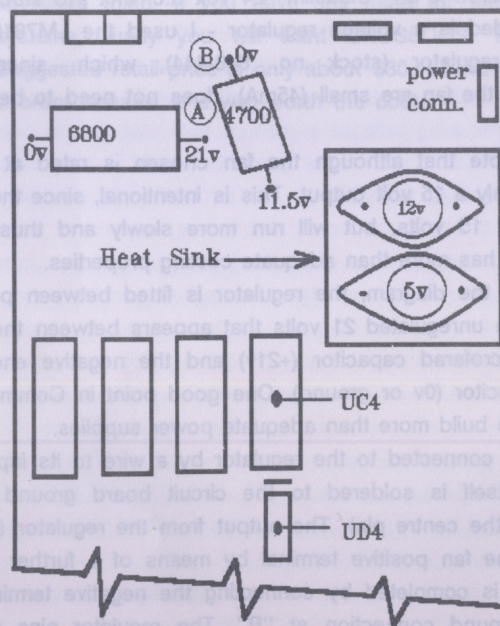
appropriately so that no short circuits can occur. The use of push-on connectors is recommended at the fan so that it can be disconnected easily if the cover ever needs to be removed in the future.

The fan itself is glued to the inside of the cover moulding, under the ventilation slots, in such a position that it will lie inside the large heat sink containing the 5v and 12v regulators. It might be necessary to bend the fins of the heat sink slightly outward to ensure an easy fit. Check that the direction of airflow is out through the cover and not into the drive.

After checking that everything fits together, switch on the drive with the cover removed to ensure correct operation (there are no dangerous voltages present, but take care not to touch internal connections anyway). If the drive powers up correctly and the fan works, the drive can be switched off and reassembled.

This modification should ensure a long and trouble-free life with no more head-banging (except at the whim of some idiot programmers and their copy protection schemes!). My own drive has been modified thus for over two years and I have not had cause to remove the cover since then.

Items listed can be obtained from Electromail Ltd., P.O. Box 33, Corby, Northants. NN17 9EL. (Tel: 0536 204555). Cost is the current RS list price plus a handling charge of £2.00 (all plus VAT).



PC SHOW 1989 RAFFLE PRIZE WINNERS

Donated by

Commodore Music Maker C128	Commodore	C.M. Hy	633386
Programming the 64 C64	"	E.A. Turner	612461
Company Pac 1.2.3. +4	"	M.J. Jones	631788
EASY Wordprocessor PC	"	M.P. Sargent	614817
EASY Wordprocessor PC	"	B. Fowler	613666
Zork II +4	"	J. Cohen	610000
The Manager PET	"	L. Martin	633911
Commodore Companion C128	Tim Arnot	J.M. Cruickshank	611938
Amiga InfoMats Amiga	"	A.J. McCourtie	630737
Amiga InfoMats Amiga	"	S. Lacey	618937
Tank Attack C64	Will Light	A.L. McLean	612316

MEMBERSHIP STATISTICS

Current 1989 membership is 3276. (Same time last year: 4271)

Computers	Number	% of Members
Amiga	1529	46.67
C-64	1469	44.84
C128	908	27.72
PET / CBM	366	11.17
VIC	309	9.43
PLUS/4	277	8.46
PC	169	5.16
C16	62	1.89
700	31	0.95
Peripherals		
Disk Drives	3091	94.35
Printers	2685	81.96
Cassettes	1694	51.71
Monitors	1921	58.64
Modems	684	20.88

SEVEN-AND-A-HALF BITS (of a two-bit disk...)

by Joe Griffin

Jiffy-DOS Revisited

In the last journal, I reviewed Jiffy-DOS and mentioned that I was awaiting the arrival of a Jiffy-DOS ROM for the 1581 and Version 6 of the kernal. Both have now arrived and been installed. I have just completed a long series of tests, involving all the combinations of Commodore stock ROMs and Jiffy-DOS ROMs which were available. Though I did find a MINOR problem with "Big Blue Reader" when used with the Jiffy-DOS Version 6 kernal, I came to the conclusion that the enhanced facilities of the Version 6 far outweighed any problems.

For me, the single biggest advantage of Version 6 is that the 'wedge' commands work, not only with Jiffy-DOS and serial drives but also with any drives connected over the Brain Box I.E.E.E. interface. Thus, I can inspect a file on my 8250 without disturbing any program in memory.

Other new features in Version 6 include a built-in file copier and support for the RAM expansion units. Commodore kindly put their RAMDOS into the public domain and I was able to obtain a copy while I was visiting Betty Clay this summer. (If anyone wants a copy, please contact me; usual library rules apply.)

One change in Version 6, is that while Version 5 allowed listings to be paused by depressing the space bar (like on the 8096); in Version 6 the same effect is achieved by holding down the control key (more like the C-64).

On the 1581, Jiffy-DOS reduces load/save times by about a quarter in 80 column 128 mode and in C-64 mode I found that load time came down to one third and saving a 69 block file was reduced from 36 seconds to 15. I have checked that the Jiffy-DOS 1581 ROM still works with Superbase. (Last time, I reported that the 1581 ROM contains a bug on BAM update. To get over this, Superbase needs to do a direct memory execute. If the code in Jiffy-DOS had moved, this could cause massive problems.) Also, the new ROM does not itself cure the bug.

1581 ROM Bug

Last time I mentioned that there is a bug in the code in the 1581 drive ROM. The bug can be demonstrated by using the program given below, which is taken from page 75/76 of the 1581 User's Guide. Type in the program and

run it a few times on a blank, formatted disk. Then display the directory of the disk, the 'blocks free' should be a few less than the 3160 of an empty disk. Now remove the disk from the drive and re-insert it, then again list the directory. The number of blocks free has mysteriously gone back up to 3160! If you look at the sectors which should have been written, you will indeed find that the data in them has been altered but they have not been allocated.

```
100 open 15,9,15:rem device 9 is 1581 on my system
110 open 5,9,5,"#"
120 print#5,"i think therefore i am":rem print into buffer
130 t=1:s=1
140 print#15,"b-a";0;t;s:rem allocate block
150 input#15,en,em$,et,es
160 if en=0 then 210
170 if en<>65 then print en,em$,et,es:stop
180 if et=0 then print "disk full":stop
190 if et=40 then et=41:es=0
200 t=et:s=es:goto 140
210 print#15,"u2";5;0;t;s:rem block allocated, now write it
220 print "stored at";t;s
230 close 5:close 15
240 end:rem now list directory
```

Although the copy of BAM held in the drive RAM has been updated, this is not written back to the disk. When the disk is removed, the RAM copy is replaced with a fresh copy read from the disk and the updated, but not written, version is lost.

The fix for this problem is quite simple, but it took a lot of effort to get it out of Commodore. In order to write the copy back to the disk, a routine within the disk ROM needs to be executed. In Superbase, Tom does this only if the BAM has changed. It would be too wasteful of time to do it every time the sector is written, as it might already be allocated.

One problem is that the entry point given is specific to the 318045-01 ROM in the 1581. If the code is moved at all, then the fix will fail and Superbase will probably crash. As reported above, Version 6 of 1581 Jiffy DOS does not move this code, so there are no problems there. I have written to Creative Micro, outlining the problem and the entry for the fix, so hopefully, they will ensure that future mods to Jiffy DOS do not screw up.

So the sixty-four thousand dollar question is "What is the entry point?"

Answer \$B612! To incorporate it into the above program, an extra line of code needs to be added, thus:

```
215 print#15,"m-e";chr$(18);chr$(182):rem execute code at $b612
```

If you want to use direct access programming, rather than stick to the standard DOS files, then you will need to use the above Memory-Execute command whenever you want to allocate or free blocks. However, if you don't intend to do anything crafty, then you won't need this fix.

Level Ltd.

I am sad to report that Level Ltd. (Rae West's publishing firm) has gone into liquidation. One of the effects of this is that the distributors (Biblios) who have about 450 copies of "Programming the PET/CBM" and 500 of the 64 book, are not allowed to sell them. I have the name of the Receiver who is dealing with the matter and hope to, at least, find out where the books go, if they are remaindered.

PET Manuals

Supersoft (01-861-1166) of Harrow tell me that they have stocks of the PET BASIC 4 manuals for sale at £10.

Superbase Open-heart Surgery

A few weeks ago, I had a phone call one evening from a member who had just experienced a major crash with Superbase - could I help. After making soothing noises and optimistically asking about backups, I offered to look at the disk for him. He had been running on a 1581 drive when in the middle of a 'FIND' command, the system returned to the menu. I suspected a soft read error on the disk and confidently told him that I anticipated getting everything back.

Two days later when I got home from a bad day at work, there was a package from Roger. His covering letter explained that the file should contain 2293 records and that the Utility program only managed to recover 164. He also said that before the crash there were about 1300 blocks free and after the crash this had gone up to 2700 or thereabouts. Very odd!

A quick directory of the disk confirmed my worst suspicions - this was a

copy of a Superbase program disk. Anyone who has looked at one of these disks will know that the BAM does not necessarily reflect the block usage on the disk. Using this disk as a data disk is inviting trouble.

The first step of recovery was to make a backup (a full backup of every sector, not a Superbase one of allocated sectors only). I used the 1581 Toolkit, as it allows use of the RAM Expansion Unit, giving only two disk swaps. Then the original disk was put away and was not touched again (until I made a boo-boo).

Being a natural doubter, I ran MY copy of Utility128 on the disk. Like Roger, I retrieved the grand total of 164 records. Ah-ha, I thought, we have a problem.

Back in September/October 1987 the Wizard of OZ (Paul Blair) published a Superbase Snooper program in these pages. I have copies of the program for both the 128 and the C-64 and after two or three nights of intensive study, code disassembly, hair tearing and many cups of coffee, I discovered that by changing ONE BYTE of Paul's code for the 1571, I could use it in burst mode on the 1581. Looking at the file with the snooper, showed that the tail end was largely intact but the the front end was a real mess. After about 1 block, the index was corrupted. Even in the intact parts, some records were corrupted.

Over to that essential tool 'Super Disk Doc' (or rather my hacked version which works on the 1581). The first block of the index was examined. This pointed to the alleged position of the second block; in this instance it was in the middle of a sequential file on track 31 - curious and not too useful! It appeared that the drive had lost track of the BAM and although sectors on tracks 31 to 35 were used by the database, they had been overwritten by other files.

At this point it dawned on me that a long struggle was ahead, so I prepared a set of sheets with columns for current track and sector, next, last, first key, last key and the magic code 'OK'. Fortunately the index sectors were easy to spot as I stepped through the disk with SDD. Each time I found one I entered the details on the sheet, for later use. Using this, I worked my way through the index sectors until I came up to the sectors which I had found to be intact at the end of the file.

The list produced by this exercise showed a number of index sectors on tracks 31 to 34. These tracks were used by SEQ files and were the cause of the corruption. As an example, the first index sector (2,28) pointed to 31,21 as the next. The next sector I found was at 3,0 and pointed to 31,21 as its previous. By modifying the pointers in these two sectors, it would be

possible to skip the intervening one and restore a valid chain, albeit with loss of some records.

After a session doing this with SDD, the recovery was ready to begin and I made a stupid mistake. I did not backup the work so far, of which more later.

I once again ran Utility128, secure in the knowledge that I would manage to recover about 1700 records. When the program had completed, I was able to discover that I had recovered the magnificent total of 164 records! I swore.

Having noticed that throughout the file there were a number of corrupted records, I modified the snooper to print the informative message "Entry Corrupt" if the data in the key field in the record did not correspond with that in the index. A couple of counters were also installed. When this program was run on my modified index, I found 1998 satisfactory records and 123 corrupt ones. This was better. I added a few lines of code to print both the good records and the keys of the corrupted ones to files on my 1571. This was superb, we were really getting places. Well, almost! Remember my lack of a backup. Having made the code mods to the snooper program, I saved it... onto the data disk, making that even more corrupt.

Once I had called myself a silly billy (or something in that vein), I retrieved the original data disk and made a backup all over again. Fortunately I had kept notes of the file link changes so it didn't take too long to remake them and then make a backup of the modified disk (stable doors?).

Back on stream again, the data was extracted onto a 1571 and was then imported into a recreated database on a fresh 1581 disk. As expected there were 1998 records in the file. At this stage it would have been easy to say to Roger, "Well, there are 90% of your records, carry on." However, it was likely that some of the records pointed to by the missing index sectors were present on the disk, if only we could get hold of them.

Knowledge of the way Superbase fills a disk helped to find a method of locating these records. Superbase starts at track 2 and works on through increasing track numbers. A further mod to the snooper allowed it to write to an array, to indicate whether a sector was corrupt, used by an index or used for data. In the latter case, a record was made of whether it was used once or twice. When the snooper had finished its run, the contents of the array were printed out in suitable form, as shown in the following table:

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Track Sectors 0 to 39, grouped in 10's

```
1 *****
2 *****i2 2221**2222
3 i*2222121i **22212212 2222i1***2 222i222222
4 2i21222222 i2222122i2 1*12222i1* *1222i2222
```

Where a '2' occurred, two records had been read from the sector; a '1' indicated one retrieval only and an asterisk '*' indicated that no records had been retrieved from that sector. The letter 'i' indicated an index sector and a 'c' showed a corrupted record. The sectors of interest were those which had not been accessed, or which had been accessed once only. Examination (again using SDD) showed which contained records and a list of these was prepared. A final modification to the snooper program allowed it to access these sectors directly and extract the records to the 1571. The 179 records recovered were then imported into a second file on the 1581. Of these, 47 were found to be duplicates of records already recovered and were deleted. (It had been deemed unproductive to determine which record of two in the sector had already been recovered, so both were extracted.) The remaining 132 records were not merged into the main data file, as they would require checking; some may have been deleted records.

At the end of the day (or several days) I had retrieved 2130 records out of 2293 or 93% of the file. I was well satisfied, I hope Roger was.

What I did not learn was why the problem had occurred. Roger had used a program disk for his data. I assume that with the invalid BAM on this disk, once he started writing to it, portions of the data file were not allocated in BAM on the disk and were thus liable for overwriting.

PLUS/4 LIBRARY UPDATE

by Richard G Hunt

Loads of Disks - Loads of Programs!

Here it is at last: the answer to Life the Universe and Everything! 43. (Bold, boxed, the works, please Ed) [ok! - Ed]

Well, near enough. 43 new disks are available in the Plus 4 library from this moment. As you pick yourselves up off the floor and reach for blank disks, please remember that the library rules still apply. PLEASE ALSO DO NOT SWAMP US WITH COPY REQUESTS! We, the copiers, both Joe Shirras and I have homes, careers and other interests, as well as melting down disk drives for you.

Having got that off my chest, let me tell you how this astounding event has come to pass.

Firstly, an apology. To those members who have kindly sent in material for the library over the last year. I have now incorporated it (mostly, I think) in 4 of the new disks. It has taken time because time is a very scarce resource in my household. I hope you understand.

Next my - and ICPUG's - very great thanks. To the same people, and especially to Kathy Holiday in Florida. I arrived home from Brittany mid-August to find a Post Card advising me to collect a parcel from my sorting office. It invited me also to pay in excess of £30 for the privilege.

Curious, I sought out this parcel accompanied by my wife, and agreed to pay when I saw that it was, as my wife kindly put it, from 'my lady friend in Florida'! I am even more curious to know what the official (female) at the post office was thinking.

When I opened the parcel, I was surprised only by the number of disks it contained - 39. Before I tell you of the disks, I must tell you that our beloved Customs & Excise wanted considerable VAT off me for the privilege of receiving these disks. I protested as strongly as I knew, without running the risk of being had up for treason, and you will be relieved to know that I recovered the impost. They had opened the parcel but omitted to read both declaration (on the outside) and letter (inside) explaining that the programs were public domain and of no commercial value.

Actually the most difficult part was yet to come: finding the time to deal with them. At last I managed to take two days off work which - (squeeze every drop of sympathy) - I devoted fully and entirely from dawn until dusk to the preparation of the disks for the library.

That meant sampling for copyrights, placing a disclaimer, and validating each disk, not to mention sorting other material and making up the remaining 4 disks which took as much time again. Then the directory of each had to be written to the catalogue disk. Making a copy for Joe took more time another day.

The 4 disks I made up are:

GAMES 3	UTILITIES 3
GRAPHICS 1	GRAPHICS 2

The utilities disk has some interesting material from Italy, including a turbo disk program. It is not completely filled, so I will add to it when the occasion presents itself, and advise when it is full in these pages. The two graphics disks show some of the capabilities of the P4. The first is a collection of graphics related programs. The second is a single demonstration disk.

The 39 USA disks which I have labelled for convenience and with some imagination USA1 through USA39, are a miscellany of utilities, games, educational etc. Rather pot luck all round, but that is how I received them. Librarian I may be nominally, but sorting and cataloging that lot would be a full time job! Incidentally, there may be duplications within these disks, as well as duplications of programs already in the library. Some may not even load or run, although I hope that they have been weeded out. That is part of the pot luck! I have found one that bombed out, but on examining the listing, I got it to run at line 1000, and then all went well. The moral is persevere.

Right then, come and get 'em. Only remember the old German proverb 'Hexen koennen wir, aber ganz langsam!' (Miracles we perform immediately. The impossible takes a little longer?)

The catalogue disk containing the directories of all the library disks has been updated as well. It contains now only program files of the directories which members should LOAD and LIST (not RUN). I have deleted the sequential file listings (.CAT extensions on the old catalogue disk).

If you need to create a sequential file listing of a directory, for example to pull into Script/Plus follow this simple procedure:-

1. Insert the disk to have its directory listed.
2. Enter the command: LOAD "\$",8
3. Change disks as required.

4. Enter the command, on one line:-

```
OPEN 8,8,8,"FILENAME,S,W": CMD8 :LIST :CLOSE 8
```

Finally, another round of thanks. To all those members who rallied round in my hours of Plus 4 -less -ness, with offers of help. My machine is now repaired (Derek Hoare, take a bow.) And now I have appropriate backup should I ever find myself in a fix again, thanks to a member's generosity.

I confess - yes, confess, - the thought crossed my mind that I had been presented with an opportunity to upgrade to.... well, let me draw a veil of silence over that. How could I with so many Plus/4 people out there depending on me, of all people?

An ICPUG member in Italy would like to correspond with other Plus 4/C-16 members. He writes:

"I am a Plus4 owner from Italy. Excuse me for my mistakes but I'm not Englishman.

I have a Plus/4 and a drive 1541. For my computer I and other Italians Plus4 owners made some programs for +4 and C16. This is all pd software.

Claudio Verniani
Via Fossolo, 10
40138 Bologna
ITALY

I'm waiting for your news with impatience."

(N.B. Some examples are now in the P4 library!)

C64 LIBRARY

by David Miller

Members have mentioned to me that when receiving catalogue disk 3 that they would like copies of nos. 1 and 2. Alas this is a hangover from the last library organiser who renamed the catalogue on updating. As of now the catalogue is ICPUG CAT AUG 89. This is the header on the disk, so you can tell which version you have. We automatically update the catalogue every two months or so.

This month, apart from the updated catalogue disk, we also have U12, a new Utilities disk. From James Mason we have an update on two programs from previous disks. These have ironed out a few minor bugs and also include some extras; BASEPRINT and PHONE FILE64. Also on U12 are 40+ very useful utilities for printing or inclusion in your own programs. Also this month come another utilities disk, U13 (which contains a lot of 1581 related material), and games disk, G7.

For radio hams we have an updated version of Digicom64 V4.01C. This replaces V4.01C on H4 and the help and instruction files on H8. H5, H6, and H7 are further disks of good radio ham stuff received from G6GCL (Jim) from Australia. Thanks to Joe Quintin for compiling them while I was away in Turkey. The radio ham disks are only available from Joe Quintin (members A-M) or myself (members N-Z). Other library copiers do NOT have these disks.

Joe Quintin, who copies all the C64 tapes has been having a lot of problems with the C60 and C90 tapes that he has received, and would prefer if members would only send C15 computer tapes. This will cause no length problem, as he uses a fast saving / loading method and can get your allocated four programs on with no problem. He also updates the tape catalogue at frequent intervals.

Any members interested in obtaining the Bible on disk, should contact me. I have the full Old and New Testaments on some 30+ disks (two sides) in SEQ files. Please note that these are not in the library.

If any members wish to write to Mrs. Burns with regard to Bob, you will find the address in previous Journals. I'm sure she would appreciate hearing from you.

Have you any comments on the C64 library? If so, please let me know. I would also like to receive any material for inclusion in the library. If anyone has any details on the SAMELCO DX-85 printer, please contact me, as a member in Malta has one of these with problems. Instruction and service books would be most useful.

GEOS GEMS

Since my last foray into the literary world, albeit a passing critique on GEOS V2.0, a large number of Icons have been double clicked and Menus pulled down. The biggest Menu pull down was that of FSSL, more on that later. The biggest shock was the response from BSW.

Like most owners of GEOS, whenever I have purchased a module or an upgrade, I have religiously completed the Registration Cards to ensure that I am kept up to date etc. etc.. It was, as I had not been informed by BSW of anything, a pleasure to receive one morning a newsletter from them. I had obviously precipitated this, as a response to my earlier letters to their Customer Service Dept.

This 14 page document was a mine of information, except it did not answer a single one of the questions I had originally asked of the Customer Services Dept. The bottom line was if you needed information obtain it from Q-Link. Totally impossible.

A few days later I received a very, very lengthy telephone call from FSSL. I had initially approached them to ascertain the holdings in the UK of GEOS Modules and hinted that I would very much like to form a UK User Group; with the usual aims of such affiliations, as, the exchange of ideas, sympathy, technical support and so on. What I hadn't fully appreciated was the enormity of the task. The sales of modules monthly runs into four figures. So with very little brainpower necessary, I arrived at the supposition that there must be a lot of people feeling as isolated as myself.

Whilst waiting to see if my last edition would actually appear in print in the ICPUG newsletter, an article was prepared for inclusion in the US oriented GEOWORLD, which is now readily available in the UK, including back copies and soon a unique compendium of the best UK applicable articles. I've mentioned this, as it at last appears that something is happening for the UK geophile. The magazine, although like GEOS, oriented towards the US market, is full of information and hot off the press verbatim releases from BSW. It must be stressed though, that GEOWORLD is not a BSW mouthpiece and although it carries BSW information it is not necessarily their opinion.

From a cultivated source, it transpires that BSW have suffered slightly as the result of an attempt to market their product on the IBM. This has necessitated a massive regrouping of resources and a reappraisal of their market approach. It is likely that during the next few months GEOS will become as familiar a catch phrase as C64 or C128. I believe that many 8 bit machines are going to be re-awoken from their premature hibernation and in

all probability some small businesses will consider this an economical starter package. Don't bother investing in your local water authority buy BSW and CBM shares the expected returns are likely to be phenomenal.

During the next few months the Christmas editions of the magazines and catalogues will be cascading through our letter boxes. For the geophile this festive season is going to see such goodies as the re-release of the geoCable and a brand new Rampack, with possibly a Desktop incorporated in it to speed up access and save that statement asking for a disk containing it to be inserted. It is also on the cards that 1764/1750 clones will be re-appearing under BSW patronage, along with cheap mice and reduced cost software. Probably, Santa will be using such trial offer software as V1.0/1/2 as stocking fillers due to their predicted, incredibly low price.

On the immediate horizon is the ability to obtain disks of GEOS oriented software from the shareware market, Public Domain or commercial Software Houses. Following this is the first product review. Should any authors feel that they would like a product evaluation, I am only too willing to give an honest critique. I have ascertained that GEOWORLD offer PD disks, available from FSSL and these contain such goodies as Clip Art, Fonts and other miscellaneous utilities. In fact there is somewhere upwards of 400 MBytes of GEOS PD software available, should enough UK demand be forthcoming, to warrant the cost of cataloguing and disk production.

Although now probably unlikely as a host cannot be found, 1990 may also see the birth of a Q-Link style bulletin board with hopefully, downloadable software and a Geosoapbox to allow frustrated owners like myself to sound off periodically. Again ventures such as this will require proof of a market capable of supporting the initial expense. With for example, only 63 registered owners of GeoProgrammer in these fair isles, a lot of confidence has got to be generated. A possible solution to this, is for us ICPUG UK geophiles to group together under one banner and start making that long awaited shout for recognition and support.

I therefore propose that should any members wish to assist me in this drive for better things, that initially they drop me a line either by letter or disk (C64/1541) and I will attempt to get things going. I have managed to negotiate certain benefits for a User Group from various outlets and feel that if enough members show willing we could actually do ourselves as users a great favour and once knowledge of the group was known to the outside world, in all probability attract more members to ICPUG. So please, any GEOS info, tips, goodies, suggestions on the way ahead, forward to me at the address below. In fact anything Geos considered.

After all, why should the Amiga owners have all the fun. PS if anyone has

a Koalapad spare I would like to try it on my modules!!

Contact J T Bourne
15 Lanmoor Estate
Lanner
Redruth
Cornwall TR16 6HN

The usual stamps, labels and packing if personal replies needed and don't fret I'm hoping for a good response so will answer strictly in turn. A similar offer to form a User Group has recently appeared in Commodore Disk User and generated a fair response, so there is interest out there.

GEOS toolkit by Kracker Jax

At first I assumed that this would comprise the usual add ons and repetitive utilities that every toolkit purports to possess and was only really of interest, as an extra to the package that I had initially purchased, Renegade or Maverick dependent on which batch you obtained. As I was keen to explore what was for me the first non BSW GEOS product, I copied the two modules over to a GEOS formatted disk and opened the first one.

Sector Editor

Like all BSW products, of which this one is not, it opens from and returns to the Desktop, so compatibility was fine. Once having opened the utility you are confronted with a very busy and what I can only term as a Dirty Screen. Dirty because it is FULL of just 2 colours; Foreground and Background and because of the amount of information and icons displayed VERY FULL of the two colours. Straightaway I would have liked the ability to call routines from a menu and only have displayed the contents of the current track and sector map. But, every conceivable requirement for the Editor is displayed as an Icon and without the accompanying instruction book, likely to lead to terminal data corruption. I hadn't a clue what 85% of them were.

Once having ascertained their use, the options available to the user are fairly standard, Track and Sector + & -, Hex and ASCII display and alteration, Linking/Chaining, etc. etc.. What is excellent though, is the fact that it admirably copes with the GEOS relative file style file allocation system and fair zips through this otherwise maze for other Editors. For the likes of myself, an embryonic Geoprogrammer, it does give me the chance to find

routines and then either dump them to printer, providing the driver is on the disk or jot down the track and sector for later analysis with a monitor.

I was pleased to have the Editor but would like to see the next version to see if it has been tidied up.

File Copier

Again a utility from the same stable as the Editor [neigh!! - Ed] and presumably from the same author. I suspect this was written after reading the above missive as it appears marginally cleaner than the Editor. I would consider purchasing this as a utility had it not arrived the same way as the Editor. It goes a long way to filling the copy hole that V1.3 owners have, although copying is a lot easier and faster with V2.0.

After again loading from Desktop, the contents of the current disk is displayed. This has information as to the disk name, total files selected for copying, total blocks selected for copying, source drive device number and type and target drive device number and type. Full Desk Accessory calling is handled in this module and may prove useful at sometime.

Files are highlighted by clicking their name and it is only these files that will be copied to the new disk. By having two drives connected a 1 pass copy is executed. Copying is started by pulling down a menu and clicking the relevant option. Then just sit back and wait. I found that if I required the odd copy of a file, i.e., from one work disk to another, then the in house GEOS method was just as fast as I was saved the trouble of loading this copier. If I required to selectively copy a large number of files, then this was the best method.

GEOS boot

This utility is not Geos callable but must contain the most controversial element. It allows the transfer of the GEOS Modules to a 1581 format and from then on the program is bootable from this device. It is controversial as it is in fact a very sophisticated copier and overrides the BSW protection scheme and could lead to piracy, but having received a letter from a very concerned businessman who runs his company accounts on GEOS and was concerned at loss of Boot file and consequent data files, it appears the only logical solution as BSW offer no other recovery medium.

So although technically piracy it appears the only panacea at present.

All in all I was impressed with the copier, apathetic about the Editor and jealous of the programming skills of the author. If you do have these

products or are considering obtaining them then once you have, take a look at the Icons on the directory page. I think they were designed by a neurotic Barbary ape with tendencies towards manic depression. Yuck!

The complete package is advertised in various CBM related magazines and not that expensive. Any problems obtaining a copy then let me know via SAE for the company's details. More reviews later.

ERRATA

One or two errors crept into the last issue, so here are the corrections. You can, of course use scissors and glue (not provided) to amend your own copy.

1. Page 428 - Half way down the page, before the words "Key to the following:" add to the end of the previous paragraph: "When you have keyed it all in key F1/P/P to commence the routine."
2. Page 428 - Second line from the bottom "**fe27,83**" should read "**fe*27,81**".
3. Page 429 - Half way down the page "N.B. & & if you ..." should read "N.B.&&if you ..." i.e. there should be no spaces between the reverse colour '&' symbols.
4. Page 429 - The start of the last paragraph should not be a separate paragraph. i.e. "&&You*in0<" and "will note..." should be on following lines.
5. Page 430 - "...ICPUG magazine - June/July 1987..." should read "July/August..."

LEARNING FORTH BACKWARDS

by Richard G Hunt

CHAPTER 4 - Stacks of room

So far, the stack has been mentioned quite a lot. Without it Forth would not be what it is. All computer processors use at least one stack but use is mainly hidden. In Forth there are actually two stacks, the second of which is the return stack. Both stacks act to some extent like variables in BASIC, to hold temporary variables or constants. Also unlike some languages where variables are local or global in their behaviour, the stack is universal. It is entirely up to the Forth user what he does on the stack. All Forth requests is that he keeps his house in order. Therefore in this chapter, we take a look at parameters and parameter passing on the data stack, the return stack, the use of VARIABLE and CONSTANT, and the creation of a new defining word ARRAY.

The Data Stack

On most FIG Forth models running on 6502 processors, the data stack area is a part of zero page. Its depth will be probably up to 128 bytes or 64 16 bit values. In most cases it will be much smaller, for example 48 values, so that operating system workspaces may be preserved for use in Forth. The depth is not really important, because any programmer who needs to go to that depth perhaps should be thinking of alternate methods of handling such arrays of numbers. Indeed it becomes quite complex to manipulate a stack of depth greater than half a dozen. FIG Forth provides words that go to a depth of three. There are variants that allow greater depth manipulation, but with the advent of Forth 83, the thinking is that simplicity is more elegant.

Stack words are listed below. Refer to the glossary for their full descriptions.

```
SO SP! SP@ DROPSWAPOVERDUP
-DUPROT
```

Sometimes DEPTH and .S will be defined as well, but they are not part of the FIG standard. In addition the output words . D. U. &c affect the stack by consuming a value just as @ C@ ! and C! push values to the stack.

Obviously operations are performed at the top of the stack. It is

necessary to bring values to the TOS as required. To a depth of 3, the above words can manipulate satisfactorily. Some Forth programmers prefer to have greater flexibility and define words that will duplicate or rotate values at any given depth to TOS, or that perhaps just leave the stack ordered differently. Forth is flexible enough to allow definition of these if they become absolutely necessary. Until a need is demonstrated therefore, they should not be used.

However to exemplify this flexibility, we shall now proceed to define PICK and ROLL.

PICK requires a value on the stack being the depth at which the required stack item is to be copied to TOS. 5 PICK, therefore, will copy the fifth item on the stack to TOS.

```
: PICK2 * SP@ + @ ;
```

An alternative definition with identical effect is:

```
: PICKUP + SP@ + @ ;
```

SP@ returns to TOS effectively the value of the stack pointer, which when added to the depth value augmented to byte level, addresses the stack item to be fetched. ROLL is similar to PICK, but rather than copying the nth stack item, it removes it from its original position to TOS. Its definition introduces the return stack and variables. The loop structure will be examined another time. First two variables are defined, their purpose to hold temporary counters.

```
0 VARIABLE S.INDEX 0 VARIABLE R.INDEX
```

Now the main word -

```
: ROLLDUP DUP ( take 2 copies of the depth parameter)
S.INDEX ! R.INDEX ! ( and save them)
PICK ( copy required item to TOS)
BEGIN -1 S.INDEX +! >R ( decrement counter and push stack to return
stack)
S.INDEX C@ WHILE ( test counter reduced to 0, otherwise loop)
DROP ( required item)
BEGIN -1 R.INDEX +! R> ( replace stack items)
R.INDEX C@ WHILE ; ( done...)
```


The return stack

On FIG Forth models running on 6502 processors, the return stack is the processor's own stack, and doubles as the return stack for Forth. How it is addressed is not relevant at this point. It is sufficient to know that it may be used, but with care. It is absolutely vital to remember that for every item pushed to the return stack an item must be popped from the return stack - within the definition, or else expect the worst. You can't mess around with the processor stack with impunity! The following words manipulate the return stack:

```
>R R> RI
```

For every >R there must be an equivalent R> and vice versa. R is simpler: it makes a copy of the top of the return stack and pushes it to the top of the data stack. I is identical, and, it will be recalled, is used mainly within DO LOOPS to fetch the loop index. From that it is clear that DO LOOP uses the return stack for keeping track of loops.

Variables

Forth variables are used much less frequently than in BASIC. Obviously that is because temporary values may be placed on the data or return stacks for as long as is necessary. Only occasionally therefore is a variable used, as in ROLL. The need for a variable there was to keep track of how many items had been moved between the two stacks. The original value was decremented by adding -1 to the contents of the variable. The word +! (plus-store) performs this action. The words ! and @ are the other most commonly used words to access variables. Variables must be declared and initialised before use, thus -

```
0 VARIABLE GREEN-BOTTLES
```

The word VARIABLE is a defining word just as : is. Having declared a variable it may have a value assigned to it, either as it is declared or by storing a value -

```
10 GREEN-BOTTLES ! GREEN-BOTTLES . 10 OK
```

As in ROLL, -1 can be 'added' with +!.

```
-1 GREEN-BOTTLES +! GREEN-BOTTLES @ . 9 OK  
5 GREEN-BOTTLES +! GREEN-BOTTLES @ . 14 OK
```

Constants

A constant is very similar to a variable, but because its value is by definition more constant, the way it is addressed is simpler. A call to a variable leaves the address of the variable on the stack. Therefore the word @ is needed to fetch the contents of the address. A constant however leaves its value on the stack. First it is defined, thus -

```
314 CONSTANT PI
```

If there is need to change the value of a constant it is necessary to place its address on the stack, not its value. The word ' (tick) does that -

```
31416 ' PI !
```

or in a colon definition -

```
31416 [COMPILE] ' PI !
```

as ' is executed immediately rather than compiled. The constant PI may be used in further definitions, for example to evaluate the circumference of a circle.

```
: RADIUS(n---).gives a circumference of PI * 2 * 10000 /MOD...;
```

PI pops the value of the constant on the stack so that the expression may be evaluated by the operators. There is no need for floating point arithmetic as everything is scaled. The result is output with a point for convenience. Although this value of PI is relatively imprecise, there is a pretty good integer approximation contained in Brodie's Starting Forth.

Arrays

Arrays do not occur naturally in Forth and have to be defined by the user. There are two ways of defining them. One is simple to do but tedious to use.

The other demands the definition of a new defining word but is purpose built as a result. An array is really not much more than a series of values addressed in a common manner. One may be used to regarding them as having dimensions, but that is only a convenience. A flat form is just as convenient for Forth. A variable is an array with only one element. To create an array of n elements, space for n values must be reserved in the dictionary. Every value consists of 16 bits (2 bytes). The variable already has 2 bytes, and so a further $n * 2 - 2$ bytes must be marked off. The word `ALLOT` does that -

```
0 VARIABLE ARRAY 78 ALLOT
```

creates an array of 80 bytes, 40 values. The array may be filled by using the word `,` (comma) or if 8 bit values are required `C,` -

```
1 ARRAY ! 2 ARRAY 2+ ! 3 ARRAY 4 + !
```

(An easier way to fill it is with a `DO...LOOP`. - see next chapter.)

`@` or `C@` will fetch the values from a given address in similar manner.

A better array is made by creating a new defining word that creates the array for you. Forth conveniently allows you to do things like this with the words `<BUILDS` and `DOES>`. First the new defining word.

```
: ARRAY <BUILDS 2 * ALLOT ( builds the entry into the dictionary)
DOES> SWAP 2 * + ; ( calculates element address at run time and leaves it
on the stack.)
```

`<BUILDS` creates code that defines the compile time action of the word. In this case the parameter on the stack is taken and that number of cells is `ALLOT`ted in the dictionary, with `DP` (the dictionary pointer) being advanced accordingly. At run time the defined array leaves its address and the stack parameter preceding it is manipulated to produce the address of the desired element. Thus

```
N ARRAY ARRAYNAME
```

will create an array called `ARRAYNAME` of N 16 bit elements (cells). Having defined `ARRAYNAME` additional words can be created to store and fetch values in it.

```
: ARRAYNAME! ( n1 n2 ---)
```

```
1 - ARRAYNAME ! ;
```

will store number $n1$ in element $n2$ in `ARRAYNAME`.

```
: ARRAYNAME@ ( n ---)
```

```
1 - ARRAYNAME @ ;
```

fetches to the stack the value at the n th element.

```
: ARRAYNAME? ( n ---)
```

```
1 - ARRAYNAME ? ;
```

will do the same as `ARRAYNAME@` but output it to the screen as well. The word `?` (like the BASIC abbreviation of `PRINT`) is defined as

```
: ?@ . ;
```

Now the expression `40 ARRAY TEST` has the same effect as the declaration of the variable with 78 bytes allotted. We can define `TEST!` and `TEST@` as above to manipulate it quite easily.

Parameter passing

We have seen that the data stack is the main mechanism for holding and manipulating temporary values. Even letters may be held on it, converted to ASCII values. The word `KEY` waits for input from the keyboard of a single key depression and returns its value to the stack. `EMIT` pops it from the stack and outputs it as a letter again! As things become more complex, the return stack is used, but remember always to clear up after you! Finally variables, constants and arrays serve the purpose of holding values of less fleeting nature. We have had also a glimpse of the real power of Forth: when something cannot be done, a new defining word is created to do it. Such a richness is not available in BASIC.

THE PRECISION OF 8 BIT AND 16 BIT BASICS

by D. Gortmans

By moving BASIC programs and running them on a number of different machines, similar but different results have been obtained. This has been a problem when the source has had to be modified to satisfy the syntax of different versions of BASIC and then test runs carried out to confirm they were correct. However, this was only a minor irritant until one day I entered into writing some programs in association with a member of my local club. These programs were designed to use BASIC to multiply and divide long numbers, and also to calculate the value of Pi to a great number of significant figures. BASIC is not the fastest way to carry out such calculations but these applications did enable us to exercise some ingenuity in programming to reduce the calculation time to a minimum.

This work started when we read the following four magazine articles.

ADD & SUBTRACTION, Owen Linderholme, PCW July 1987

MULTIPLICATION, Owen Linderholme, PCW August 1987

LONGDIV, Clive Semmens, PCW November 1987

EXACT DIVISION, A.M.Tucker, Practical Computing, October 1986

Many errors and some poor logic were found in the coding and the published programs ran very slowly. All three applications were rewritten using a PET model 3032, by my associate H.M.Tucker before I took a hand in checking, providing some final touches and producing versions that ran on other machines.

Programs have been produced that multiply, divide and produce values for Pi on the PET model 3032, C64, IBM PC, AMIGA and the BBC. These conversions brought to the fore a most interesting fact concerning the differences between the BASICS on 8 bit and 16 bit machines. It was found that generally the 8 bit machines had BASICS which were accurate to less than 9 significant decimal figures whereas 16 bit machines had BASICS accurate to less than 7 significant decimal figures. As the programs were based on representing a long numbers as a sequence of small strings, it was necessary to have each small string 3 characters long on a 16 bit machine and 4 characters long on a 8 bit machine. The effect of this was to erode much of the speed advantage of a 16 bit machine. However, it certainly brought home why a number of my engineering programs written in BASIC on a domestic C64 gave answers that were more accurate than those

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obtained on my bog standard PC at work.

To demonstrate the relative precisions of BASICs on different machines, let us take the value of Pi. Now, $\text{Pi} = 3.14159265358979...$ However, a good approximation is $355/113 = 3.1415929235...$ Based on this ratio, GWBASIC and AMIGABASIC both gave 3.141593. A CBM calculator, a PET, C64 and C64 Emulator on an AMIGA all gave 3.14159292 The BBC Emulator on an AMIGA gave 3.14159.

On the basis of the above values it appears that by considering precision alone, the C64 is one of the leaders. I DO know that it is possible to use double precision and change the above relative accuracies but generally this will erode the speed of the programs even more.

Finally, the AMIGA is able to have a string length of 32,767 characters. This has an interesting effect in the MULTIPLY program as it allows two long numbers of up to 255 digits to be multiplied together producing a product consisting of up to 510 digits, that is if you can wait a total of 45.16 secs. for reading the input, carrying out the multiplication and then outputting the result. All other machines considered have maximum string lengths of 255 characters hence they produce products that are limited to 255 digits. With some reprogramming the limit imposed by the max. string length can be overcome but as we did not wish to pursue this line of development, the programs remain limited as described above.

CAVEAT EMPTOR

My dictionary explains that this is the principle in commerce which states that without a guarantee the buyer takes the risk of quality upon him or herself. I thought I had better confirm the meaning since this is one of the few Latin tags I thought I knew. What has this to do with computers you may ask? Read on and digest this cautionary tale.

In the course of reading the computer press, which came my way some time ago, I became intrigued by advertisements for auctions of computer equipment. It so happened that, at the time, I had available a small amount of cash and a growing desire to have a printer. Well the desire had been there for quite some time but the necessary cash hadn't. Put the two together and what was more natural than to go on a family inspection trip to an auction.

Viewing day came and off we went with some very firm ideas of the plan of campaign. Look, listen and learn were the order of the day and probably leave well alone. Indeed I had gone to the trouble of contacting the Incorporated Society of Valuers and Auctioneers. Their address being 3 Cadogan Gate, London, SW1X 0AS. They sent an informative pamphlet. Lots of good common sense advice to be taken notice of, especially by novice punters like us.

Arriving in good time for the evening session our eyes feasted on the serried ranks of monitors, computers, printers in all shapes and sizes. What appeared to be new unopened boxes containing heaven knows what. Names to be conjured with - IBM, Hewlett Packard, Epson, Olivetti, Canon, Amstrad, Brother - even an Amiga lay in its box. People milled about looking, testing, fishing disks out of brief cases and shoving them into drives on Wren Executive portable systems. Eighty and 132 column printers were being tested here and there.

However being a C64 family we were interested to see a 'new' British Made 80 column dot matrix printer, switchable NLQ, IBM compatible 120 cps with Commodore interface. Suitable for our machine and new with boxes still taped. Untouched by human hand? We asked to test the model on show. No one had a spare plug and we poor punters had neglected to bring one. Silly us, we ought to have taken a plug and screwdriver with us. Sometimes one forgets the important things in life. With hindsight that is the moment we should have left.

In the event we stayed to see how the bidding went and some good stuff went for a song. We tried a bid on a second-hand Oki printer but that went elsewhere. Our prize came late in the evening's proceedings and that

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was getting closer and closer. Wiser counsels advised leaving for the return trip but that word 'new' and even 'C64 compatible' proved a bigger draw.

At last the great moment arrived and we sat silently watching the first printer go for £50, £60, £70, £80, wavering now but then £90 and a final bid of £100 clinched the deal. We could afford that but son number two still cautioned father to leave well alone. Father now had sight and smell of a printer in his nostrils and bid for his prize - it was his. Well apart from waiting ages to pay and parting with £115 including VAT.

Arriving home late at night all were anxious to set up the prize and try for our first printed word. We had lights, we had bells, we had movement, it obviously wanted to work but apart from a blur on the page we had nothing. It was late and we were all tired so we left it until the following evening. Another frustrating evening spent reading the user manual and various settings of dip switches elicited nothing. We looked under the hood. The smell was of new and unused, the look was of new and unused. Why wouldn't it work?

The week end arrived and we set about an inch by inch inspection. Examination of the print head was the first priority; this was detached and surprise, surprise one pin was missing, several were obviously bent and two had springs and little plastic caps missing. Further examination provided a lovely golden label with a dealers name, address and telephone number. Good, we thought, he will be able to help. Little did we know! After some polite shuffling from one person to another we were told that "well perhaps we did have such a machine here but it could only have been for repair". I wonder!

Unfortunately for us the conditions of sale stated:- 'All lots are sold as viewed... with all faults and errors of every description... no warranty or guarantee... no refund under any circumstances etc'. The printer still smells and looks new if only I could track down a print head. The moral of the story is "buyer beware"; why didn't I take notice of the only Latin tag I ever learned. Please take note and don't fall into the hole I dug for myself. Money is not so easily come by.

To close on a brighter note. Some time later Father Christmas visited me with a Rolls Royce of a printer in a Star LC 10. So there was a happy ending.

PC HARDWARE EMULATION ON THE AMIGA 1000

by Ron Roberts

I purchased my Amiga 1000, in the middle of last year. I principally use my computer for number crunching (various statistics programs I've written myself) and for writing articles and research reports. I decided that more memory would be needed in order to handle longer documents and for when graphics were to be included with text. After considering some of the external options (Allegra, C Ltd board) which are fine in themselves, but somewhat limit further expansion, I decided to go for the Spirit internal board (reviewed in ICPUG May '88 Newsletter) from Bytes and Pieces. This is expandable up to 1½ megabytes and leaves the external bus available for other devices. I opted for 1MB on the board to begin with.

On seeing the instructions for installing the board, I took some third party advice and opted to have the board soldered in (apparently there is a risk of the board working loose and shorting out other components - so be careful if you do it yourself). I got Granada Computer Services to do this and must say the service I received was abysmal. The job took about a month (I was promised 10 days). I complained and asked for a replacement machine in order to print out research reports which were needed for work, and was duly promised one. Instead I received an ill informed and abusive letter from the manager threatening that I would have to pay if their work turned out to require repair. The overall saga is a much longer one, but the moral of the tale is, I think, beware false promises and inefficient companies. When I eventually received the machine back, the board itself worked perfectly, giving about 1.4MB on power up.

In order to give myself PC compatibility (they've never heard of the Amiga at work!) I recently acquired one of the 1060 Sidecar units. This plugs into the expansion bus on the A1000. The unit comprises a basic 256K PC bridgeboard (expandable to 512K for an extra 50 quid) with a 5¼" 360K disk drive, built in a sturdy metal casing. This plugs into the expansion bus and fits nicely alongside the A1000. There is a port at the rear of the unit to take another disk drive. Either the Commodore or NEC 3½" drives can be connected here and will format disks to 720K. If you prefer another 5¼" drive you can also connect this. Accompanying the hardware you'll get an MSDOS manual and two disks including standard MSDOS text editor 'Edlin' and GWBasic. All in all good value.

On powering up I soon discovered there was a problem with the Sidecar and the Spirit board both running at once. Disabling the board from software

(I tried the V1.1 operating system which does not recognise the extra memory) did not work. A couple of very helpful phone calls to Cavendish, where I bought the Sidecar sorted out this problem. The cause of the difficulty resides in whether the Spirit board is autoconfigured or not. If not then it's plain sailing. Use the ADDMEM command in your startup sequence (included on a installation disk supplied with the board) for the extra memory to be recognised and for the Sidecar unit to run.

A very helpful person at Cavendish Commodore Centre gave me instructions over the phone - so if he's reading this thanks!

Once your startup sequence has been modified to take account of the additional device everything should work O.K. The manual accompanying the Sidecar provides simple instructions for how to do this. For example, to run a Janus fixed disk in your Sidecar, insert the command 'djmout' into the startup-sequence immediately after the bindrivers command. I would also recommend you put in a wait command so that your initial sequence begins as follows:

```
Bindrivers
Wait 40
Djmout
```

After powering up and a bit of a wait all should now run smoothly. The PC runs in its own window, allowing you to switch between PC and Amiga applications should you desire, and is activated from a window on the workbench. There are two icons, one for mono and another for colour applications. The latter is CGA compatible. I've tried running a couple of standard PC software packages; Microsoft Word and the integrated Smart suite of business programs, both with no problems. There are simple instructions for setting up RAM disks via the CONFIG.SYS file on the MSDOS disk should you need them. The PC side does run a bit slowly (a 4.77 MHz 8088 CPU - same as the original!) but should prove satisfactory for most purposes. If you wish to speed some applications up, there is space to mount an 8087 math co-processor.

If you wish to run a hard disk, the Sidecar has room for 3 standard expansion cards. I tried a 32MB Western Digital hard card which I formatted on both the Amiga (18MB) and PC side (14MB). Users can select their own partition sizes. This is definitely a good cheap option for getting a hard disk for your Amiga (this takes up 1½ slots).

Initially I installed, and was working off the hard disk with the V1.2

operating system. I've since installed V1.3 with no problems, although I'm not using the FastFiling System as I'd have to reformat the hard disk to do so.

I've recently had the opportunity to try the hard disk used in the Sidecar and the workbench startup sequence in an Amiga 2000 with bridgeboard installed and it has worked perfectly. Overall then, I think the Sidecar is an excellent way of getting PC compatibility for your A1000 plus the opportunity to use a low cost hard disk. Voila! You now have access to both the PC and Amiga libraries of ICPUG.

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CONNECTING AN AMIGA TO A TV/MONITOR

by John Walker

I have had an Amiga 500 computer for about 3 to 4 months, and I am writing this in the hope that I may pass on some information to other Amiga users who may want to connect their own computers to a T.V./monitor which has a SCART input socket. Also to the Ferguson monitors employing the TX90 chassis i.e. the 14" colour portable TV/monitor model Nos. MC01 and MC05.

This article describes how to connect the Amiga's output to a monitor with either a SCART input or, in the case of the Ferguson monitor, with a 7 pin din plug.

First of all here are the connections from the Amiga's 23 pin 'D' type connector to a monitor with the SCART input socket (see table 1). You will require the following items :-

A small soldering iron about 15 watts and some thin solder.

A 23 pin D socket and cover.

2 metres of 8 core screened cable.

A SCART plug and cover.

A 10K 5% 0.25watt resistor.

2 phono plugs,

A small length of twin figure of 8 screened cable (for stereo).

If the monitor has a stereo audio input connect the 2 phono plugs to one end of the twin screened cable, the other end of this cable is taken inside of the 23 pin D socket cover where it is connected to the two wires of the 8 core cable which carry the left and right audio signals to the SCART plug. Connect the screens of these cables together and insulate all of these connections, I would recommend the use of heat shrinking tubing for this. Then connect the other ends of these 2 cables to pins 2 and 6 of the SCART plug. If the monitor has only a mono audio input then link together pins 2 and 6 of the SCART plug.

I find the best method of soldering wires to the plugs and sockets etc is to place the plug or socket in to the jaws of a small vice and to solder the wires on to the pins.

PIN NO.	SIGNAL	PIN NO.	WIRE COLOUR
AMIGA 23 D SOCKET		SCART	

3	RED ANALOGUE	15	RED
4	GREEN ANALOGUE	11	GREEN
5	BLUE ANALOGUE	7	BLUE
NOTE 1 10	COMPOSITE SYNC	20+18	YELLOW
17	GROUND	17	BLACK
NOTE 2 22	AV MODE WITH 10K RESISTOR	8	PURPLE
	AUDIO INPUT RIGHT	2	WHITE
	AUDIO INPUT LEFT	6	GREY
19	GROUND	4	SCREEN

NOTE 1:-
On certain monitors with the SCART socket (ie SONY) pins 20 & 18 on the SCART plug need to be linked together to obtain a stable picture.

NOTE 2:-
On some monitors they detect the presence of a signal on pin 20 and automatically switch the input to the SCART socket, thereby giving priority to the incoming SCART signal. If your monitor does not do this, provision is made for auto switching via pin 8, and a 12 volt DC presence on this pin will switch the input to the SCART socket.

The 12 volts DC is obtained from pin 22 of the Amiga via a 10k series resistor, I would recommend this to be fitted in the SCART plug.

Here are the details of the connections from the Amiga's 23 pin 'D' type connector to a monitor with a 7 pin 270' DIN type input socket (i.e. the Ferguson MC01 & MC05)(see table 2). You will require the following items :-

A small soldering iron about 15 watts and some thin solder.

A 23 pin D socket and cover.

2 metres of 6 core screened cable.

A 7 pin 270' DIN plug.

An inline phono socket

A small amount of single screened cable (for the audio signal).

PIN NO.	SIGNAL	PIN NO.	WIRE COLOUR
AMIGA 23 D SOCKET		7 PIN DIN	

3	RED ANALOGUE	7	RED
4	GREEN ANALOGUE	3	GREEN
5	BLUE ANALOGUE	5	BLUE
NOTE 1 10	COMPOSITE SYNC	2+4	GREY
17	GROUND	1	BLACK/SCREEN
NOTE 2 14	AUDIO INPUT MONO	6	WHITE

NOTE 1:-

Pins 2 & 4 are linked in the 7 pin DIN plug.

NOTE 2:-

The Ferguson monitor has a mono sound input. Take the inline phono socket and connect it to the short length of the single screened cable, the other end of this cable is taken inside of the 23 pin D socket cover where it is connected to the single wire of the 6 core cable which carry the mono audio signal (wire colour white). Connect the screens together and insulate all of these connections. Once again I would recommend the use of heat shrinking tubing.

The inline phono socket is then connected to the phono plug on the end of the 'Y' lead which is supplied with the Amiga, this is used to link the left and right audio outputs from the Amiga to feed to a mono signal input.

When the Amiga is used with the Ferguson monitors all 4,096 colours may not be displayed, or the picture will 'white out' on high saturation colour levels. This is because of the way the RGB input signal is handled by the monitor. The input of the monitor is linear for signal levels up to 1.5V after which any signal increase has no further effect. Hence the input is linear up to 1.5V and digital above this.

The Amiga gives an output of more than 1.5V on certain signal levels and causes the picture to 'white out' on high signal levels, you can overcome this effect by making some internal adjustments to the monitor, this is done as follows.

1. Remove the back cover after first removing the mains from the set.
2. Locate the RGB/Video interface panel. This is found on the bottom of the set. Panel no. PC1127.

3. Locate the 3 preset RGB gain pots. These are
RED GAIN RV875, GREEN GAIN RV869, BLUE GAIN RV893

These will be set at maximum gain, you will have to adjust these controls from the max gain position to some intermediate position to give the correct range of colours on the screen. The position of these pots will have to be found by trial and error by adjusting each one in turn by the same amount until the correct colours are displayed and the picture does not 'white out' on high brightness scenes. These adjustments won't affect the 'off air' signals too much.

[Editor's note: This is not for the inexperienced; there are 20,000 volts floating around the backs of monitors, which could render you seriously dead.]

DATES FOR YOUR DIARY IN 1990

- Jan. 12 - 14 The 16 Bit Computer Fair (Amiga, IBM & Atari ST)
Royal Horticultural Halls, Victoria, London
- Feb. 7 - 9 3rd Amiga European Devcon. Holiday Inn, Paris, France
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Business Design Centre, Islington, London
- April 7 - 8 MIDI Music Show
Novotel, Hammersmith, London
- April 20 - 22 ICPUG SE Group Weekend
The Queen's Armes Hotel, Charmouth
- April 24 - 27 Which Computer Show
NEC Birmingham
- May 4 - 6 Spring Computer Show
Olympia, London
- Sept. 13 - 16 European Computer Entertainment Show
Earl's Court, London
- Sept. 25 - 28 Business Computing Show
Earl's Court, London

REVIEW - CUMANA CAS 1000S

by Peter J Dean

Using an IBM PC clone at work and having an Amiga 500 at home does have its disadvantages. File transfer between the two machines was the most obvious but I also wanted to be able to learn MS-DOS, practice it at home and learn how to use the software packages that I use at work where less time is available for experimentation.

The cheapest solution to my problem was to purchase the Transformer software package and a 5.25" disk drive. The disk drive I chose was manufactured by Cumana, my choice being influenced by the performance (quietness) of a friend's 3.5" Cumana disk drive.

The unit's colour scheme matches that of the Amiga, is six inches wide, eleven and a half inches long and just under two inches high. The drive comes with connecting cable, a daisy chain socket for further disk drive additions and an enable/disable switch all fitted to the rear of the unit. Also fitted to the rear of the drive is the mains power cable for the built in power supply. The power is necessary if you already have one external disk drive powered from the Amiga. A nice touch by Cumana is that the power cable comes complete with a moulded on plug. On the front of the unit there is a twist action open/close lever similar to the 1571 or 1541 II disk drives, and a 40/80 track selector switch.

My equipment set up comprises an A500 with a LAN 3.5" drive configured as device DF1: and the Cumana 5.25" drive configured as device DF2:. When running the Transformer IBM emulation software the internal drive is configured as device A: the LAN 3.5" as device B: and the Cumana 5.25" as device C:.

In operation I found a few pleasant surprises running under both Amiga and Microsoft disk operating systems. Being used as a third Amiga drive I thought I would have to mount the unit but on power up with the new drive connected I discovered it was already mounted and not by the startup-sequence file. With the drive 40/80 track switch in the 80 track position, it behaves exactly as another 3.5" drive with exactly the same capacity of 880K. Also I thought I would have to issue the Diskchange command each time I changed floppy disks, this was not the case as this drive unlike the Commodore 1020 disk drive has a detection device to inform the disk operating system when a floppy disk is changed. Its speed of operation must be slower than the 3.5" drives as the heads have further to travel but I did not notice any significant change in access times. Using the drive in IBM PC

emulation mode (MS-DOS) it behaved very well indeed loading and saving programs and files much as the IBM PC clone at work does but the Transformer software is excruciatingly slow and as such will obviously slow the drive access times down while it thinks what to do with the information. A bonus that Cumana include with the drive for use under MS-DOS is a floppy disk containing DISK.SYS a device driver. This driver will allow you to format disks with a capacity of 720K so that you can read and write disks of two formats. The two formats being 360K (the standard format for 5.25" MS-DOS disks) and 720K (a non standard 5.25" MS-DOS disk format). The added bonus to this is that this driver also works on the 3.5" drives enabling you to format them as 720K disks (the standard format for 3.5" MS-DOS disks). Normally the Transformer software will only allow you to format both 3.5" and 5.25" disks with a capacity of 360K.

The only small niggle that I have with the drive is that the power supply is quite noisy. There is a pronounced buzz which is very annoying especially when you are doing quiet tasks such as typing this review. With the power supply for the Amiga you have to put your ear against the casing to hear the buzz but with the CAS 1000S it can still be heard 3 metres away. Apart from this one complaint, I have been very pleased with this drive and would thoroughly recommend it as a third drive especially as the floppy disks are at least half the price of the 3.5" ones.

The price of the Cumana CAS 1000s is in the region of £135. Always consult your friendly Discounts Officer John Bickerstaff for the best place to buy from before purchasing any computer equipment - it can save you pounds.

BRIAN'S BLUNDERINGS

by Brian Fowler

Amiga Fun

Jeremy Joel, of Calle Son, Gargori, No.4., Capdepera, Mallorca has written to me concerning some of the trials and tribulations he has recently undergone.

"I am a new member to ICPUG, and also to computing; the other thing against me is that I live here in Mallorca and so when I want information it's not quite so easy. I cannot just pick up the phone (well I can but it's very expensive) or ask a friend down the road. The other major problem that we abroad have is that if we want to buy equipment we have only the reviews to go on, as when we come to the UK there is always little time to research into which piece of equipment would suit our needs the best. An example here is that I want a scanner in order to put incoming letters onto disk in order to store them with outgoing mail. I also want to be able to put drawings and photographs onto disk so that I can use them in my publicity for the guesthouse we run. I have written to a few places that sell scanners and asked for information and a sample of the output from the scanner. Most firms don't even bother to reply, and none have sent a sample of the work that the scanner can do, so which scanner do I buy?

"Anyway enough about moans. I do find ICPUG most informative, and also that it is even more useful to me an Amiga owner than 'AUG' which is just for Amiga users, so do keep up the good work.

"Whilst in the USA in March I bought a Stardrive SCSI module, a Starboard 2 with 1MB memory, and a Seagate ST157n harddisk. They are much cheaper there than in the UK, and since I was on holiday I had more time to visit computer shops. I now required a power unit which I intended to buy in the UK as I wanted one of 240 volt input; I also thought this would be very easy to obtain, but this seemed not to be the case.

"I tried Bytes and Pieces and many other places without success. I wrote to Seagate and eventually got a letter from Seagate France with this wonderful paragraph, 'A worldwide market is not the best solution to get back a good service on buying products,' - however they did give me 6 addresses which I wrote to and they either didn't sell power units, or they didn't reply. After a few dozen more letters and no success, a friend of mine got me a power unit from Radio Spares which worked perfectly, although it was expensive.

"At this point I thought I was all set, the memory worked and had always

worked very well indeed and made a great difference to many programs, and the hard drive purred away nicely. I made up a lead between the SCSI and hard drive, I checked it a dozen times so I knew that it was perfect, but I couldn't mount the drive, and also the software kept asking for a lun number.

"At this point I started to ring people in the UK where I was told to try this number and that but none worked then I started another volley of letters, I find you have to write 3 to get one reply, and that reply is usually 'I don't know'.

"Eventually I had a letter back from Warners of San Diego where I bought the equipment, (they have always been very helpful, but are of course a long way away), telling me that the reason for not being able to mount the drive was either the cable was incorrect, the software revision was incorrect, the harddrive was bad, or the interface was bad. They also told me how to check these.

"Well I was certain that the first two were fine so that left the hard disk or the SCSI, and since I have written to both Microbotics in the U.K. and USA and never had a reply from the many letters that I have sent, I thought I had better start with the Hard disk especially as I had obtained a manual, in fact 3 manuals of the Seagate, and in it it told how to test the harddrive on its own, so this is what I did, and discovered that it was faulty.

"You can imagine how I felt. By now it was well into September and I still hadn't got the hard drive to work; worse, it was faulty, what to do? send it to America? to whom, and anyway it might get lost. It would cost a lot in any case, and it was still under guarantee.

"So yet another volley of letters mainly to authorised distributors in the UK and not a lot of help, after all who wants to know about faulty equipment that came from the USA, not my problem!

"I then wrote to Seagate Technology in Marlow, had a phone call from their Mr Collins who was extremely helpful, sent the unit to him and now I have it back and it is working perfectly.

"So the story has ended happily in the end, but it took 8 months and a lot of heartache, and hundreds of stamps too. Well we all know the moral to this story don't we, but for some of us it takes a long time to learn.

"Once I had everything working I followed the Microbotics information for mounting the drive. I used lun = 0 which worked fine, and I formatted the drive using their installation disk. The blurb said I must make a V1.2 boot workbench disk. Being me I made a V1.3 boot but that didn't work, so I did as I was told and made a V1.2 disk, ran drive diagnostics and found that the hard disk was perfect, no bad blocks at all. So at last I was all set, but the blurb doesn't tell you how to put programs onto disk.

"I have an Amiga 1000 and have now started with experiment to put programs onto the disk. First I put workbench 1.3 onto the disk, then I took an extras drawer and put the workbench into it, having first made a copy of the drawer. I copied most of my programs onto the disk, Deluxe music, Deluxe paint, The works, etc., each one into a renamed drawer. Scribble from which this article was written is in one of the drawers so the hard disk window looks nice and neat, but I have a problem. If I click on shell in my workbench 1.3 I get the message 'error while opening sys system/cli205', if I click on Deluxe Paint2 window I get the message 'please insert dpaint 2 in any drive', with Scribble if I ask for spell check, I have to insert the 'Works' disk in any drive, so somewhere I have not done things properly. I even tried this with cli using 'copy df1: Dh0:empty all' (empty being the drawer name), but with the same results.

"I wonder if this article - if it is ever printed - might spur someone on to writing another article telling us how to put programs onto hard disk, and what partitions are for etc., and also if its possible to boot from the hard disk using kickstart 1.3.

"As you can see from the address I live in Mallorca where the sun shines, and would like to welcome any Amiga owners who are on the Island on holiday to drop in on me here for a chat. We run our house as a guest house and so can put people or families up at very reasonable prices too. If anyone wishes to correspond with me on this subject or other Amiga subjects I would be most happy.

"Perhaps in ICPUG we could start a register of the good and bad firms, the ones who are helpful and the ones who never reply to letters, so that in the future we can avoid the lousy firms and make firms give us a better deal."

Well, that's Jeremy's letter. I had to edit it slightly for the Newsletter, but even so I am sure we can all sympathise with him. There is nothing worse than spending a lot of hard earned money on hardware (or software) and then not being able to use it for lack of decent support. As Jeremy says, there is a moral to all this - before buying anything, check with our Discounts Officer; for technical help, contact our Technical Co-ordinator; and if you're really desperate, send me a letter!

Back to Jeremy's outstanding problems. I don't know the particular hard drive he owns, so cannot advise on booting WB1.3 except to say that a demand to the supplier for updated software would not go amiss.

The problem with Shell is indicated by the error message - the 205 at the end is the Amiga telling you it can't find something. Unfortunately Shell needs

WB1.3 to run, so there's not a lot you can do until you have 1.3 up and running. Incidentally, if you ever wondered what those error numbers displayed by Workbench mean, type in a Cli window 'fault 123' - or whatever the number was. The Amiga will then tell you in English (well, nearly English!)

Deluxe Paint II is a protected program; whilst you can install it on a hard disk, it will refuse to run until you satisfy it that you have the original disk - otherwise unscrupulous characters could install it and the pass on the original disk to others. Superbase is another protected program, of course, but to my mind uses the much more civilised 'dongle' method of protection - you don't need to feed the machine the original disk, but you do need to ensure that the supplied hardware key is plugged into port 2 of the Amiga.

Scribble! is not copy protected, the problem here is to do with the fact that the program needs to find its dictionary files. When it runs from its original disk, it knows that the disk is named 'Works' - therefore it always looks for a directory called 'Works'. Now that it lives on your hard disk, it can't find 'Works', so the Amiga asks for it. Try this:

Open a cli window, and type in

```
assign Works: dh0:scribbledrawer and press RETURN
```

Now, assuming that your hard disk is called dh0:, and Scribble! lives in a drawer called scribbledrawer, then whenever Scribble! wants to find its files, the Amiga will direct it to the correct location. Smart, eh?

If you use Scribble! a lot, it is worth editing your startup-sequence file to incorporate the above. You could even use Scribble! to make the necessary changes, but make sure you do the "assign ..." after the line which mounts your hard drive.

Hope the above is of assistance, Jeremy, and I hope that you can find answers to the questions I couldn't answer here. Surely one of our members could help?

Who wants an Amiga 2000 ?

Well, it would be nice, but do I really want one? My trusty old (June 86) A1000 works fine, and I have a PC1 for "compatibility". Still, it would be nice to switch between AmigaDos and MSDOS, to ensure total brain burn.

So went my thinking but of course an A2000 is expensive, and the peripherals I have on the 1000 (Insider RAM, Supra hard drive) would be of no use on the newer machine. Of course, there is always Sidecar, the

original hardware PC Emulator, but I had heard that it would not work with expanded RAM and hard drives. Luckily Cavendish Commodore at Leicester came to the rescue. I voiced my fears to Yuri at Cavendish, and he kindly allowed me to take a Sidecar unit on approval.

Well, I approve. I had to play about with the expansion ram board, cutting a lead and removing the auto configuration feature, but once I had done this, the Sidecar worked. At the risk of boring all you smug 2000/bridgeboard owners, let me tell the rest of you about some of the things it can do.

Probably the most impressive thing is that I can boot my Amiga (from floppy - I don't have the necessary ROM to boot from the Supradrive - yet) and then the Sidecar unit boots. It boots without a disk in its floppy drive - because a special file on the Amiga's hard disk appears to Sidecar as a PC hard disk (drive C). The Sidecar actually boots from a virtual drive which is implemented on the Amiga's hard disk. Sidecar can also read the Amiga system clock, which has been set by the battery clock on the hard drive, so I can open a PC window on the Amiga's monitor and be greeted by the familiar Dos welcome screen, showing the correct time and date with the cursor flashing at the C> prompt.

Unlike the PC1, Sidecar comes without parallel or serial ports, although there are three slots to take standard PC cards. However, by running a program on the Amiga side, you can dedicate the Amiga's printer to the PC side, giving you hardcopy. Even PrtSc (simulated by Shift-RtAmiga-P) works, giving you a screen dump just like on a real PC!

As for compatability, it runs most of the PC stuff I have. It falls over sometimes, but probably not quite as often as the real thing does. I suppose that means it isn't fully compatible, but I can live with it. "SI" gives it an index of 1 (so it's slow) - but it doesn't pretend to be any quicker than a standard PC, so that's OK.

As with an A2000 and a bridgeboard, the Janus device lets you swap files between Amiga and PC, and I understand that a hard card in one of the slots could also be accessed by the Amiga. Now that would be useful.

The Amiga 1000 Sidecar is reputed (by those who should know) to be functionally the same as an A2000 with XT bridgeboard. In my opinion, an excellent solution to those 1000 owners who wish to upgrade without saying goodbye to all those expensive peripherals that have attached themselves to their Amigas.

HARD DRIVES AND AN XT BRIDGEBOARD

by John C Bond

The following is an article in reply to the letter from Tim Gathercole in the May/June issue. Whilst I have been an 'Amigan' only since Christmas I have been a PC owner for some time. The PC side of this article I think I can say is accurate but anything that I may have overlooked on the Amiga side is due to my relative inexperience with the machine.

Virtual drives

In this context, Virtual drives enable you to create a pseudo drive using a storage device on the Amiga side of the bridge. Once installed, they appear as a normal MSDOS drive when using the PC side of the bridge, on which you may create and delete files and directories as normal. The virtual drive is also visible on the Amiga side of the bridge but it will appear as one large file and is not accessible from the Amiga other than for deleting, etc. I am not sure if the manuals for the Bridgeboard are updated very often but I purchased my Bridgeboard last December and full details for installing virtual drives are contained in appendix C:, but for those in doubt, this is what you do.

1. Open a PC window and do a directory of your boot disk. It should contain a file called CONFIG.SYS. This is an ASCII text file that is automatically processed by MSDOS when the PC is first booted and may be edited by a text editor or word processor that outputs in ASCII or non-document mode, that is without putting any control characters into the file. The following line needs to be added to this file:

DEVICE=JDISK.SYS

Note: The files CONFIG.SYS, JDISK.SYS and JLINK.COM should be in the root directory of your boot disk. Having checked that this is so reboot the PC (CTRL/ALT/DEL) to make the changes in the CONFIG.SYS file operative.

2. The next step is to run PCDisk, which is the PC drawer on the Amiga, by double-clicking on its icon. This must be running for JLINK to work!
3. All being well JLINK should now be in operation. To test this simply type

JLINK <RETURN>

This will result in a display as shown below;

Drive	Status	Linked to
-------	--------	-----------

d:		
----	--	--

e:		
----	--	--

f:		
----	--	--

g:		
----	--	--

This shows the status of the virtual drives and at present it will be blank as no drives have actually been set up. A virtual drive can be linked to a file on the Amiga side of the bridge and this is where JLINK comes in. The syntax for JLINK is: JLINK n:filename /sw

n: is the drive letter to use for the virtual drive as for the JLINK display.

filename is the name to be used for the file on the Amiga side. It may also include a path.

/sw is for one of the following 'switches';

/n all messages suppressed except errors.

/c:200 /c means create that file on the Amiga side and the number is the maximum size of the file in kilobytes.

/u unlink a file on the Amiga side.

/r make the file read only.

EXAMPLE

JLINK d: df0:pcfile /c: 200

This will create a virtual drive d: of size 200K. The file that is used for its data is created on drive DF0: and is called pcfile.

This shows the updated JLINK status.

Caution

There are a few points to be aware of when using virtual drives so please take note.

Using RAM: as a device for a virtual drive gives you a relatively fast

access drive but when you re-boot the Amiga all data will be lost unless you are using RAD: on Workbench 1.3, (even that will not survive turning the machine off!), so you will need to save the file to disk before turning off. If you do not specify the size of the file to be created on the Amiga side it will carry on increasing in size until the drive on which it is situated is full. This is not too much of a problem on a floppy or hard drive but if you are using RAM: for your virtual drive the Amiga may run out of memory and you will suffer a visit from the GURU and lose your data!

The Amiga file that contains the virtual drive, as stated previously, cannot be accessed by the Amiga but it can be renamed, copied and deleted as any other file. The file cannot be deleted however when it is still linked to the PC side. Use JLINK with the /u switch to 'unlink' it.

Hard disks

You have two options if you wish to add a hard disk to an Amiga 2000 with a Bridgeboard.

(a) Purchase an Amiga hard drive which the PC side can access by using virtual drives.

(b) Purchase a PC hard drive which may be partitioned and used by both sides of the bridge.

Option (a) can enable you to boot your Amiga directly from your hard disk (no more waiting for DF0: to finish thrashing around) and will allow you faster access to the hard disk. Option (b) will mean that you cannot boot from the hard-disk as the Bridgeboard needs to be enabled before the hard disk can be used. However it does have some advantages.

The principal advantage is that your wallet is less likely to echo if you purchase a PC hard disk! Amiga hard disks are becoming more affordable but the fact remains that you can pick up a PC 20MB hard disk or hardcard for around £200 and a 40MB one for £260. Secondly you may partition the hard disk so that both operating systems can use it.

Setting up the PC drive for use by both machines takes a little longer but it is fairly straight-forward. I purchased an A5060 hard disk and controller which arrived already partitioned for use by both sides of the bridge, 10MB for each side. However I soon found that I needed more space for the Amiga so I have repartitioned it to 14Mb for the Amiga. The procedure for partitioning a hard disk is as follows.

The Bridgeboard PC boot disk contains a file called FDISK.EXE. Once you have your hard disk installed boot your Amiga, open a PC window and

run FDISK.

Press 4 to display your current partition status. This will result in a display similar to that below;

Partition	Status	Type	Start	End	Size
1	A	DOS 0	613	614	

If there are no entries it means that the disk has not been partitioned

To partition your hard disk between the PC and the Amiga it will be necessary to delete the DOS partition. Select option 3, you will be warned that any data on the disk will be lost so make sure that all files are backed up before proceeding.

The next step is to decide how large to make the partitions. Selecting 0 for start and 304 for end will give you 2 equal partitions for a standard 20 megabyte disk. To be able to boot the PC from the Hard disk you must make the DOS partition active. Once you have decided on your size for the DOS partition and entered the values, FDISK will carry out a low-level format of the cylinders specified. Once completed the PC will reboot. You will then need to format the partition using the DOS FORMAT.EXE program. To boot the PC from the hard disk you need to use the /s switch as below;

FORMAT C: /s <RETURN>

This will format the partition with DOS and place the system files necessary for booting on the first sectors of the hard disk.

Well that is the PC side taken care of!

Also on your Bridgeboard disk is a file called ADISK.EXE. This is a similar program to FDISK.EXE but this time it sets up the AMIGADOS partition.

Type ADISK <RETURN> and another menu appears.

Enter 3 to create the Amiga partition starting at 305 and ending at 613. It is not possible to make the Amiga partition "active" as you can only boot the Amiga from DF0:

Once again a low-level format takes place. Once completed the Amiga partition needs to be formatted with AMIGADOS. I have not got around to using the fastfile system yet so this is for the standard file system.

Leave the PC Window open and open a CLI window from Workbench.
Type

DJMOUNT <RETURN>

You will get some error messages as the device being mounted is not yet formatted for use by AMIGADOS, just ignore them and type;

DPFORMAT DRIVE JH0: NAME "drivename" <RETURN>

Substitute your name for drivename. The Amiga partition will then be formatted. On completion you may copy your system files from DF0:, type

COPY DF0: TO JH0: ALL <RETURN>

To mount the hard disk when booting insert the command DJMOUNT at the beginning of your startup-sequence.

EGA monitor

The Amiga 2000 is fitted with four PC expansion slots which enable you to fit standard PC expansion cards. However, the Bridgeboard is not a conventional IBM compatible and while I have had no problems running PC software PC hardware is another matter. The expansion slots in a PC all share the same bus which links them to the main processor and memory and this can cause problems with memory address locations used by various add-on boards. I have a PC digitiser that works fine on a humble Amstrad 1640 but when installed in the Amiga the software that drives it refuses to acknowledge its presence. I have not delved too deeply into why this is but I suspect that the problem is due to a clash with Direct Memory Addressing, that is, the digitiser wants to use the same location as another device. A lot of boards have links on them which enable you to select different address locations but this particular one does not. So if you plan to purchase a graphics board it will be worth your while finding out if it will work in the 2000 first.

The Amiga uses the linear RGB input to the 1084S monitor so the EGA card would have to have a TTL RGB output to make use of this monitor. It is possible to have both sources connected to the monitor at the same time but the TTL input takes priority over the linear input so you would need to disconnect the TTL source to be able to use the monitor with the Amiga.

Workbench 1.3

I have upgraded to Workbench 1.3 and was rather annoyed, to say the least, that there was no reference whatsoever to upgrading an A2000 fitted with a Bridgeboard.

Simply transferring the PC Drawer is not enough so here is a list of the files that you will need on your V1.3 boot disk. You will need to delete a number of files that come with the original Workbench to make room for the PC files so make sure you do it on a copy of Workbench. The choice of what files you delete is fairly flexible but do not delete files that are needed by the Amiga during booting up, I deleted the contents of the Utilities drawer as a starter and I also do not use the PC Mono option so I left this off my modified Workbench 1.3 disk.

DF0:C/DJMOUNT

DF0:DEVS/JDISK.DEVICE

DF0:EXPANSION/JANUS.LIBRARY

DF0:EXPANSION/JANUS.LIBRARY.INFO

DF0:FONT/PCFONT.FONT

DF0:FONT/PCFONT/STYLE

DF0:PC/LPT1

DF0:PC/LPT1.INFO

DF0:PC/PC COLOR

DF0:PC/PC COLOR.INFO

DF0:PC/PC MONO

DF0:PC/PC MONO.INFO

DF0:PC/PCDISK

DF0:PC/PCDISK.INFO

DF0:PC/PCPREFS

DF0:PC/PCPREFS.INFO

DF0:PC/PCWINDOW

DF0:SIDECAR/SCANCODE.TABLE

DF0:SIDECAR/SIDECARKEYS.TABLE

I think that should do it for an A2000 without a hard disk. Although I have a PC hard disk in my A2000 I have left all these files on my boot disk as although it may take a few seconds longer to start up, I know its all there!

Hybrid software

The A2088 manual mentions hybrid software that exploits both sides of the Bridgeboard but as far as I know there is nothing on the market at present. I really do not see there being much prospect for any in the future as any software that made use of the Bridgeboard would be of interest only to Bridgeboard owners and that they must represent a very very small percentage of the PC/Amiga market. It would not be commercially viable for anyone to devote expensive development time on such a project so I suspect that it will be left to enthusiasts to develop any such software. Then again, apart from being able to claim that "I was the first!" I cannot see why anyone should want to develop anything in that area, after all what can a PC offer that an Amiga has not got already? MSDOS perhaps?!!

HELP FILE

Digitising Service

John Bond of 4, New Houses, Middle Hill, Stroud, Gloucs. GL5 1NT is offering a digitising service to members at £8 per Amiga disk. EGA versions are also available to PC users at £3 per 360K disk. Contact him for more details.

STOP PRESS! (AGAIN)

We have passed 100 so we can now 'Move to go'.

ICPUG binders will be available by the end of this year at £5.50 each inclusive of post, packing and VAT. They will take six of the current sized journals and have a gold ICPUG logo on the spine. There will also be a gold frame at the bottom of the spine for the volume number and the year. To enable you to number and 'year' your binders we will include a Letraset with gold numbers and letters to match the logo.

Orders please to John Bickerstaff (address inside front cover) with cheque or crossed postal order made out to ICPUG and a self-seal or sticky label endorsed with your name and address. Your membership number should be stated in your written and dated order. Sorry, this offer applies to the U.K. mainland only.

CP/M AND THE COMPUNET MODEM

by Archie Swan

"Contribute to the Journal", suggests (is that really the word?) the Editor. On reading other contributions I feel most inadequate; some of these articles seem more like submissions to the Royal Society. Now don't get me wrong, I'm not complaining about the content - on occasion I have been known to learn a thing or two from these technical experts - it's just that my interests are more business rather than programming. However there are times when you try out some new area and you think that maybe someone else may benefit from your experience.

Not too long ago, in a back street Emporium in Leeds, I chanced upon a little black box which was offered for a small amount of money. It happened to be called a Compunet Modem (don't stop reading yet). As there had been, in the past, quite a few contributions about communications in the Newsletter which had intrigued and, at times baffled me, I decided to find out for myself if this comms scene was as bad, or as good, as the various articles made out. The modem that I aquired was second hand, which was my first mistake, there being no documentation with it. However on trying it out, it seemed to be ok. Considering the apparent age of the beast, the first tryout was on my battered old C64. I suppose that if I had used a colour monitor / TV, sunglasses may have been needed, but on my old mono screen the display was reasonably acceptable. This display informed me that about 8K of memory had disappeared. Back I went to my old ICPUG Newsletters to see if there was any info on the use of this 'state of the art' peripheral. Unfortunately, not much seemed to be of use at this stage. Still, lurking in the bottom of a cupboard there were some old Commodore User, Commodore Horizons, Your Commodore and CCI magazines, 1984 - 1987 era. Scattered between them was sufficient information to provide me with ideas on how to attempt testing this beast. I found that by pressing <SHIFT-C> or typing CONNECT <RETURN>, a message will come up on the screen asking you to type in the phone number you want to dial. Once you've done that, the modem will dial away for you. A second command which you can use, provided you haven't yet dialled is <SHIFT-E>. Typing <SHIFT-E> or EDITOR <RETURN> puts you into a screen editor - a sort of mini wordprocessor - which may or may not be of use to you. In this mode you enter what is called 'Duck Shoot' mode. This is a menu across the bottom of the screen which is scrolled by the left / right cursor and you make your selection by pressing <RETURN> on the highlighted option. This is similar to

the screen which you see when you actually manage to connect up with Compunet. This editor holds about eight pages (or screens) which you can store, print or perhaps later send to someone else once you have reached the state of using it over the phone lines.

Sounds easy so far doesn't it? This was the stage I'd reached when I ran into problems. It's alright, I can hear your remarks about buying something without documentation; there's an answer to that later. At this point my thoughts were directed towards the Newsletter, namely a remark that Bill Gardner had set up a bulletin board which could be accessed 'using TTY s/w'. My problem? I started off working life as an electrician and 's/w' to me is shorthand for 'switch'. No wonder I got funny responses when I phoned various people in ICPUG, asking where I could get this 'TTY switch' so that I could modify my little black box. It dawned on me eventually that 's/w' here means SOFTWARE. Please, all you experts, if you are going to use shorthand, define your terms; ICPUG members come from a wide variety of backgrounds and probably use the same shorthand for a dozen different things. [This Editor discourages the use of shorthand terms and generally expands them when found. In fact I had already expanded Archie's 's/w' before realising it was intentional, so I had to put it back again! - Ed]

However, on with the tale. During my phone sessions, snippets of information from Joe Griffin and Brian Grainger helped me on my merry way, for which I owe many thanks. Helped by those snippets I decided to shell out some readies on the recent Compunet offer. Ok, so it meant that I would now have two of these devices, and just look at the prices of modems - how many cost less than 100 quid? Well, my new modem arrived from Compunet very promptly. It turned out to be a different colour, slightly different shape and said to be C64/C128 compatible. "Tally ho!" Says I. "Oh!" Says I on opening the box. Documentation is shocking; it consists of ONE sheet of A4 size paper with minimal information on it. More useful was a photocopied sheet of Compunet telephone numbers; this telephone list is essential for anyone to start with a Compunet/Commodore modem. Oh well, that old article did say that when you dialled a number onto Compunet, some software would be pushed into the modem so that you could get cracking. It says it's usable on the C128; lets have a go. I followed the instructions closely (being somewhat aged and slow) <SHIFT-C>, typed in a local telephone number, "Dialling", says the screen..... Loads of garbage; dots, stars and what looks like a foreign language comes up. Thinks: "Is this what logging on looks like?" Well one of the articles had warned me that logging onto Compunet could take a bit of time, but foreign languages were never mentioned. Then everything came to a stop. I tried a few more times but had

the same result. Transferring the new modem to the trusty old C64 came up with the same results. At this stage, having my password etc. from Compunet, I decided to try out the old second hand modem. It worked, partially that is, after the connecting information appeared on the screen, information as to what was happening appeared in English. This was followed by the sudden appearance of what is the Compunet introductory screen. Unfortunately this screen doesn't last too long but it has a bit of useful information on it. If you are a first time user, use the NEW-USER and INTRO routine for the first few sessions to get limited access when the Compunet logging on screen appears. That's where I went wrong to start with; with my old modem I typed in my information provided by Compunet and Compunet responded as though I was trying to illegally use it. Passwords are identified with the identity of the particular modem that is registered. Once that idea had registered with me, all was fairly plain sailing. Using the NEW USER routine has, obviously its limitations but you are allowed sufficient time to get the feel of what's going on. So, back to the new modem to try it out again. This time I managed to get halfway through the procedure before everything came to a stop. The oldish newsletters came in useful here. In a past article there was a mention of this type of fault, which was supposed to have been fixed. So I phoned Compunet and explained the situation. "No problem", said the young lady at the end of the phone, "send it back and we'll send you another". At the same time she transferred my password so that I could use the second hand modem with the system. They were most helpful; the only problem was the delay in the return of the replacement modem, and let's face it, these things happen.

Once onto Compunet I found that there were plenty of areas to investigate. Most of them however are not available when using the NEW-USER routine. Not having too much interest in games and such, I found that the communications areas were the first areas of interest to me. They had to be as I hadn't registered for access to the ICPUG area. Using my C128 more often than the C64 these days, another interest is the CP/M area. At the moment it seems to be very limited. My impression is that the CP/M starter disks from one of the ICPUG copy sources will provide you with much more material; and it won't cost you as much as it would to download from the Compunet system. Still, it's there and it may develop well. However, back to the Communications area.

There is quite a range of comms software in the area; some of it free (apart from the telephone bill, that is) and some of it will cost you a smallish amount of money. This is where I return, in thought, to Bill Gardner's Bulletin Board. To access it, according to the Newsletter you will need a basic

teletype (TTY) software (s/w). That type of software is available in its basic form for 'free' from Compunet. About the most you can do with it is log on to a bulletin board and 'chat' to it. If you find a bulletin board that allows you to download programs etc. to your computer, you will need something better than a basic TTY program. The hint was in the Newsletter; 'To download will require XMODEM or equivalent'. That drove me to the world of communications protocols. At this stage I must recommend some Newsletter articles as being valuable sources of information. Three issues from 1986; nos. 2, 4 and 5, the authors being Mike Todd and Brian Grainger - they really do make sense once you start playing around with a modem.

One comms program that I have found to fit my needs, for the time being at least, is Edterm by Eddie Carroll, which I bought from the Compunet comms area. An optional extra that I found very sensible and useful is that there is a demonstration version of it 'free', which you can play with and get used to what the program will do without using the telephone lines. Documentation on the program is, to me, very good and includes some very useful information on comms. Be warned though, downloading programs like this may lead you into another slight trap. Edterm is what is termed a 'protected program' on Compunet. That means that it will only run on your computer with the Compunet modem plugged in and it HAS to be the modem that was used to download the program.

So, using Edterm, off I went hunting Bill Gardner's board. Regretfully, on the odd occasion I ran into the problem of 'noisy' telephone lines. This can cause all sorts of problems, the worst being the situation where both my end and the bulletin board end seemed to get suspended in mid-air somewhere. When that happens, the action that seems to have the best results is, for the want of a better description, to use a CP/M command, come to think of it, it's an old 'hot valve' computer command: <CONTROL-C>. You may have to try it more than once, but it does seem to unstick things frequently. Having done that, provided it works, log off the bulletin board immediately. You can always call back again. I do mean LOG OFF - exactly as the bulletin board requests you to do - otherwise you may well foul up the system for someone else. Unfortunately, using Compunet can lead you into bad habits, particularly in logging off as its virtually an automatic procedure. If you decide to have a look at bulletin boards, then at least have the courtesy to follow their rules, otherwise they might make sure you can't log on again.

As mentioned earlier, my interests being business and CP/M slanted, I did find out there on the phone lines a number of boards that seemed to be of possible use. I was and am using Edterm in 'ordinary' Commodore mode, so the question now arose "can I download CP/M stuff onto a standard 1541 or

1571 disk and convert it to CP/M format?" Part of the answer was on the Compunet setup and part was on Bill's board. It's also in the ICPUG library I believe. Then the penny dropped. It was started a long time previously in the Newsletter; there was an ongoing discussion about converting from one disk format to another which culminated in a review of a program called 'Big Blue Reader'. I was already using that to convert Superscript files across to IBM format. It can be used to convert to and from CP/M as well. Off I went on another trial or tribulation.

I had by this time found what is known as an R/CPM board fairly close to where I live. Having gone through the board's requirements earlier, I was counted as a regular user and was allowed 45 minutes access time for downloading. Using the Compunet estimates that 10 seconds would allow 1K to be downloaded, 45 minutes sounded quite adequate for my purposes. On logging on, I logged as soon as possible into the CP/M download area. Eureka! I was confronted by the normal CP/M prompts and they worked from the keyboard. There on offer was a copy of the system directory which I promptly downloaded to look at later. Its size was 22K and for those of you using CP/M, it was a squeezed file. Approximate downloading time was 5 minutes. Including logging on and logging off, the total time spent was 6 minutes. With later downloads, this timing appears to be fairly representative using the Compunet modem. As another example, I later downloaded a program of 98K which took 23 minutes to download (395 blocks on the 'standard' disk format), so on average a successful download works out around 0.7K per 10 seconds or 4.62K per minute. That information may help you to plan your timing, particularly if you are concerned about the phone bill being clocked up.

I downloaded the system directory using the XMODEM protocol, onto a standard 1571 double sided disk, as a binary (PRG) file. Switching off and removing the modem (with the modem plugged in, the C128 remains in C64 mode), I then switched on in C128 mode and loaded up Big Blue reader, making sure I had a CP/M formatted disk handy. BBR's instructions were followed and to all intents and purposes I had completed the transfer and conversion. The system was shut down again, including the disk drive, since sometimes BBR can have lingering effects on the drive. The setup was then switched back on again, this time in CP/M mode, the new disk logged and, lo and behold I could read it. There was information on about 90 Megabytes of software. On closer inspection, the majority was for IBM users, but there was an awful lot of CP/M material. It was in the standard CP/M directory format and when printed out took up 8 sheets of 66 line paper, an Aladdin's cave!

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Many of my questions had been answered; yes, the lowly Compunet modem can help me get on with understanding CP/M; yes, I can download CP/M and IBM material using a 'humble' C64 and a Compunet modem, convert the material to the format I want to use and, so far, use the material that ties in with my interest areas. One thing I also found is that if you aren't careful, talking to other computers can become somewhat addictive.

I accept that compared to other all singing and dancing modems that are on the market, the 1200/75 baud rates which are used by this modem are a bit slow, but it can do far more than I was led to believe. My main criticism concerns the baud rate though, whether it's the modem or the Edterm software I'm just not sure, perhaps one of you experts can shed some light. If I download, it is at 1200 baud, if I try to upload it happens at a s-l-o-w 75 baud. One of the requests made by bulletin boards is that it would be nice for users to give something back. Now, to upload a decent program at 75 baud would be damned expensive in telephone charges, and with the boards - sensibly in my opinion - putting the user on a time limit, there just isn't sufficient time. Yet, somewhere I have this vague memory that there are some registers in the Compunet modem which, if altered would allow it to transmit at 1200 baud, which means to me - unless I've missed the point somewhere - that I would be able to send at 1200 baud.

After all this learning, the question arises, "Has it been worth the effort?" Most definitely! I know that my phone bill may have gone up a bit ("More than a bit!" shouts She Who Must Be Obeyed), but now I've got a large library available to me should I need help with the solving of a problem at an awkward time of the day (or night!). It also means that I may not have to pester one of the ICPUG copiers, but then again I might have created more copying for them to do! (I have provided 'Printmaster' - a CP/M version of Print Shop which I found on my travels.)

So, by having a dabble with a 'bargain', maybe I've managed to make more than one contribution back into ICPUG.

WHO'S AFRAID OF THE dBase DOT PROMPT?

by W Clewlow

Those of you out there with C128's may have been put off buying dBase II after reading reports of how unfriendly it is. Don't be put off by this, it's very easy to use interactively and the programming language is no harder than any other to learn.

True, when you start up dBase II, after a message from Ashton Tate about licences you are left looking at a dot at the bottom left corner of the screen. Do not despair HELP is at hand. Type in help (and press the return key of course) and dBase lists all the subjects on which it can help you. This is mainly a list of KEYWORDS used in dBase. Further help on individual keywords can be obtained by typing in help <keyword>. In this first (last ?) article we shall look at keywords used in creating and using a simple database.

In the following paragraphs I use <ENTER> to mean press the return key.

CREATE

```
.CREATE <ENTER>      (dBase prompts you for a filename)
.CREATE <filename> <ENTER>
```

Filename may be up to eight characters to which dBase adds a .dbf extension. Most alphanumeric characters are allowed in the filename except colons and spaces.

dBase then prompts you to enter details for field one. You have to enter a field name, a field type, the field length, and number of decimal places each separated by a comma e.g. depno,n,6,0. There are three field types. Numeric which can hold any numeric value up to the length of the field. Character which can hold any printable character and Logical which can be T or F (True or False). Continue adding fields until your record is complete and press return without entering field details takes you out of the create routine. You are then asked if you want to enter data at this point, if you press n you are back at the dot prompt. If you press y then you are presented with an input screen with all your fields blank and can enter data into the first record. When you have entered all data for the first record you repeat the entry for the second record. This continues until you just press return with the cursor in a blank field one. You are back at the dot prompt again. So let's create a simple database.


```
.CREATE test
ENTER RECORD STRUCTURE AS FOLLOWS
NAME, TYPE, WIDTH, DECIMAL PLACES
FIELD
001      depno,n,6,0
002      lname,c,20,0
003      fname,c,10,0
004      married,1
005      <ENTER>
Enter details y/n? n
```

We have just created a structure for a database with four fields per record but no data yet. So how do we use our database?

```
.USE <filename> <ENTER>
```

Yes back at the dot prompt again. Use just makes the named database the currently active database. Let's make the database we just created active.

```
.USE test
```

Okay let's add some records to our database.

APPEND

Append can take a number of arguments but for now we will stick to two simple cases.

```
.APPEND BLANK <ENTER>
```

Adds empty records to the database which we can use later.

```
.APPEND <ENTER>
```

The screen clears and we are presented with an input screen showing our four fields all blank and a note telling us which record this is.

```
RECORD 000001
DEPNO :      :
```

```
LNAME :
FNAME :
MARRIED: :
```

Enter your data in the fields and when you have finished record one the whole process is repeated for record two. This will continue almost ad infinitum until you press return with the cursor in the first field when the field is blank. Back to the dot prompt. So now you want to see what is in your file? One of the commands for doing this is LIST. This command can take a number of parameters, but for now we will use it on its own.

```
.LIST <ENTER>
```

Lists the whole file to the screen beginning at record one and continuing to the end of the file. Scrolled off the screen too fast to read eh!. Lets go back to the start of the file and try again.

```
.GO TOP <ENTER>
```

Takes us back to the start of the file.

Lets try something different, this time we will use the command DISPLAY.

```
.DISPLAY <ENTER>
```

The command on its own displays the current record. In this case record one as we are at the top of the file.

```
.DISPLAY ALL <ENTER>
```

Displays all the records in a file but in groups of 15 records then waits for a key to be pressed and displays the next 15.

```
.DISPLAY NEXT 5 <ENTER>
```

Displays the next 5 records. So now we know how to create a file, add records to it and list the records to the screen. In the next exciting instalment we will look at indexes and selective lists. Oh! I suppose you want to know how to leave dBase.

```
.QUIT
```


ICPUG SOUTH EAST NEWS

by Janet Bickerstaff

Friday, the thirteenth of October. What better day to switch off the computers and avoid the dreaded virus, and what better place to go than Lourdes? Thanks to our good friend Bob Metcalf at St. Peter's Pilgrims this was possible. Fourteen of us met at Gatwick by the Ice Cream Parlour. Our flight was delayed for one hour, which gave us time for huge ice creams and a cup of coffee.

There were four Davids, Doctor David (Annal), Farmer David (Prentice), David the Tax (Pettet) and the Late David (Parkinson), who was often seen plugged into a Walkman and nose in book. We were led by Tom and Eleanor Cranstoun, and also in the party were Sue Pettet, Kevin Viney, John and myself and four friends from Eleanor's office.

Some of us managed to avoid computer talk completely, for others it was a golden opportunity to discuss all manner of computer topics. Kevin and the Late David had an in-flight debate on the respective merits of the Amiga and the Archie - a warm up for the meeting to be held at Biggin Hill on the 23rd November.

The Hotel Mediterranee was to be our home for the weekend. A comfortable modern building by the River Gave. After a four course dinner we made our way to the Domain to watch the torchlight procession and service in front of the Cathedral. On the way we watched the bats wheeling over the river and thought of Joe Griffin and his passion for bats!

It was a moving sight as the column of pilgrims made their way round the square carrying special candles with protective shades, and singing 'Ave Maria'. At 10 pm it was warm enough for us to sit outside the Cafe Royal for a cup of coffee. We then moved on to the Cafe Roi Albert for a round of bieres. A few called it a day, but six stalwarts made it to the Cafe Snack du Cinema Pax for yet another biere and a Croque Monsieur. It was here that on a previous occasion we had indulged in bacon and eggs at 3 am! Fortunately it was all downhill back to the hotel.

Saturday dawned warm and sunny (I heard the cocks crowing around 5 am!) As the hotel mini-bus was not available, we decided to hire a coach. Tom and Eleanor negotiated a 47 seater, complete with driver Michel, [! - Ed] at a very reasonable price. Michel was a great character, with a keen sense of humour. At crossroads he would take both hands off the wheel and turn round to say "Which way you go?" Nevertheless he safely drove us along some tortuous mountain roads. Tom Cranstoun acted as tour guide and gave

us a running commentary on the loudspeaker system.

We took the coach to the Grottes de Betharram that afternoon. It was an underground expedition and it took us an hour and a half to climb down five levels of caves inside the mountain. It was well lit but you had to mind your head at times and there were lots of stairs. At one point there was a flat bottomed boat along the river, followed by a little train, which brought us out at great speed to the bottom of the mountain - quite an experience!

That night we treated ourselves to a gourmet meal out. Five courses of superb food. However it was the end of the season and about twenty young hotel staff were celebrating the fact at the same restaurant. Lager louts had nothing on these young ladies, and I must admit that some of us did not finish the meal but retreated to the peace of the hotel.

Sunday was another beautiful day. We hired Michel and his coach again to go to the village of Bartres where Bernadette lived for a while with her foster mother. Farmer David was in his element when we visited the farmhouse where she lived. We toured the farmyard and David gave us a detailed account of how to use a device for holding a cow in a sort of crush. We walked up to the bergerie where she tended her sheep. The ground under the trees was thick with autumn crocus - it was a lovely sight. We went on to Lac du Lourdes for a coffee. Apart from a few fishermen we had the place to ourselves and it was very peaceful. Right by the cafe was an old tree with huge bunches of mistletoe hanging from its branches. It was warm enough for hornets still to be buzzing around. We returned to the hotel for lunch to find that Cardinal Basil Hume had arrived with about 250 young pilgrims from Westminster. He kindly signed a prayer book for one of our party.

That afternoon we went up to Gavarnie in the High Pyrenees. It was a two hour climb in the coach, with a brief stop at the Pont Napoleon. It was much colder up in the Pyrenees and a few claimed to have done a quick dash up to the snow line. There was fresh snow on the peaks. Others inspected the shops and retired for a welcome cup of something warming!

On our last day we had a final look round the shops for presents and souvenirs. Traditionally Farmer David takes home a rather grotty statue, either with flashing lights or which forecasts the weather. We met up in Les Halles, the local market, and sampled the cheeses. Some were very strong and nearly took the roof off your mouth, but we bought a nice camembert and some brie. We adjourned to the "Araldite" cafe opposite the market. It acquired this name when we noticed that all the handles on the somewhat chipped cups had been securely fixed with large amounts of glue!

There was time for last minute shopping at the Duty Free shop at Tarbes.

In fact the plane was delayed and we re-organised the seating arrangements in order to play a team version of Trivial Pursuit! We had a comfortable flight on a Sabena 737 which was half empty, then it was time to say goodbye until the next South East Group meeting on Thursday evening.

David Parkinson (from Ariadne Software) was our speaker that night, and his visit to Lourdes had given him inspiration for new facility on the Amiga. His talk was entitled "How the Amiga Works and Tricks that you can pull with it". How the Amiga works was covered in the first twenty minutes, and the audience were enthralled when Dave explained some of the tricks, such as touchscreen, a joystick controlling the machine, or even two mice. He talked of the food chain and interactive video. The "ICPUG South East Memorial Facility", which was still being invented that very afternoon, allows record and playback at varying speeds. Dave claimed that this came to him when he was stuck half way up a mountain at Lourdes and wishing that he had not started to climb it in the first place!

On November 9th the speaker will be Mick Ryan, the President of the South East Group and on 23rd November is the great debate - Amiga v. Archimedes! Our Christmas Party is on 14th December and all are welcome, with or without computers. We meet at the Library, Biggin Hill, Kent, every Thursday except the first Thursday of the month. Meetings start at 7.45 and are adjourned at 9.45 when some of us retire to the Black Horse just along the road. Why not come along?

On 18th January, Equinox will be showing their Small Business Accounts package, and 15th March sees the return of Dave Parkinson for another Amiga session. (Beware the Ides of March?)

FOLLOW UP ON A REVIEW OF THE PC1

My review of the PC1, published in the July/August edition of the Newsletter, was deliberately written in my early days with the machine, as the impressions of a new buyer. In it I raised queries to which, between my writing of the article and its publication, I discovered most of the answers. Many of these solutions were given to me by the PC1 Users Group, the brain child of Norman Keylock. He acts as an informal focus for the exchange of information between users, passing information amongst correspondents who write to him.

The queries I raised were all to do with the ways of expanding the system, as I felt that the Commodore documentation was inadequate in this area. I soon traced the source of a mouse, and purchased the Commodore 1352 mouse, which came complete with the Microsoft mouse driver software. This connected directly to the mouse socket, was adequately documented, and worked without any problems. My dealer's earlier comments about the non-availability of the necessary software proved false.

I have not yet purchased a hard disk or card, although I probably will soon. However, I have confirmed that, as I had been led to expect, an expansion box is required. Indeed one was advertised in the May/June edition of the Newsletter. It is possible to add the expansion box and a 20 Megabyte disk or card for something in the region of £300. A friend of mine has done this with no problems, although the separate expansion box does lead to a rather untidy footprint.

Equally I have still not expanded the RAM to 640K, although I have now been told that the RAM chips are readily available. Apparently these should be 4 x 64 Kbit, 4464 type with 18 legs, and not the more usual 4256 type with 16 legs. I quote, not having investigated the truth of this since I was given this information. I am also told that opening the machine to fit the chips does not invalidate the guarantee.

Commodore have confirmed that my formatting problem, which I also mentioned, is a fault of my drive, and not the PC; bad luck for me, but at least indicative that adding an external drive should be easily achievable normally.

In my review I intimated that I considered the PC1 good value for money, but raised concerns about the documentation of its expandability. My further investigations have shown that expansion is easier than I had first thought. However, if a hard disk PC is the ultimate requirement, the costs advantages are substantially reduced by the requirement for an expansion box.

INSTALLING THE NEW 1MB FAT AGNUS CHIP

by Ken Turner

So you've gone and done it. Or maybe you haven't but will eventually! You've got yourself the first available slice of the new ECS (Enhanced Chip Set). You may even find yourself lucky enough to have some instructions on how to fit the chip. The problem is have you got the correct instructions? The following installation procedure has been sent directly from Spirit Technology in the good old US of A. The developers over there have had use of the new chip for a good while now and have found that the original installation instructions do not work correctly. If you want to make sure that you have a fully functional Amiga, or are having problems already, read on and all will be revealed.

Before attempting to fit the new Fatter Agnus you should consider that some programs will run slower or in some cases not at all unless you have more than one megabyte of memory. The cause of this is that a very few programs require FAST memory in which to function. If this memory isn't there you may well have a trip to guru-land.

Fitting instructions for the A2000.

The very early A2000 owners may hit a large snag here as the original Fat Agnus was oblong in shape. The newer chips are square and will quite obviously not fit. It's a terrible shame but anyone with one of these older A2000's may as well stop here or consider buying a newer model (who said all the problems only applied to A1000's?). Having satisfied yourself that your Agnus is square we'll carry on. It starts getting technical here so take it slow and easy and above all else GET EARTHED AGAINST THE DANGERS OF STATIC.

1. Locate the jumper marked J101 (lower right of the power connector CN400) and move the installed shorting plug which should be bridging pins one and two to it's new position which should bridge pins two and three. By doing this it will enable address 19 from the 68000 (see page 13 of the A2000 schematics).
2. Next locate jumper pad J500 (lower left of IC 8520 at U301). Take a very sharp scalpel, modelling knife or stanley knife and cut the track connecting the two pads. Try to apply firm pressure to break this link

instead of cutting across it as the knife may slip and cause untold damage to your machine. By breaking this link you enable the EXRAM signal which can be seen on page 9 of the A200 system schematics.

3. In the middle of your new Fat Agnus is a notch. This marks where pin one is (see diagram). Count round the chip till you get to pin 41. You have a choice here of bending the leg of the chip or bending the corresponding leg in the chip carrier. If you don't bend this pin you will end up with an NTSC display as the PAL signal (under KickStart 1.3) is only enabled by physically disconnecting pin 41. This will change when KickStart 1.4 arrives. You will then be able to switch display modes under software control.
4. Finally locate pin one of the chip with pin one on the carrier and insert the IC with firm but even pressure.

Fitting instructions for the A500.

Unfortunately the A500 has had a number undercover updates. At the moment only one of the A500 boards can be updated with the new chip easily. More information should be forthcoming on fitting the Fatter Agnus to the other machines. The one A500 to which the upgrade is relatively simple to perform can be identified by locating the J2 jumper pad. This is to be found tucked between the 68000 and the kickstart chips (see diagram).

1. Remove the A501 1/2MB ram pack (if you don't have one fitted, buy one because the Fatter Agnus converts this extra 512K into chip memory). Open up your A500 by removing the screws - three at the front and three at the back. Disconnect the keyboard cable which feeds through the metal shielding. Remember that when reconnecting the keyboard the black cable goes to the left. Remove the shielding by bending the tags back.
2. Locate jumper pad J2 (between the 68000 and kickstart chips - see diagram). The jumper runs from front to back just below a slim blue capacitor assuming you have your A500 orientated with the drive at the rear right. Pin 1 of the pad is at the front, pin two is in the middle and pin three is at the top. You will notice a very fine solder track running from pin one to pin two. Cut this track using a very sharp modelling knife or similar tool. Use a magnifying glass if you have to - above all be careful you don't slip. Solder pins two and three using a soldering iron

which is not too hot and is UNPLUGGED, or preferably, some of the cold liquid solder of the type which is used to repair car heated rear window elements. Using the cold solder solution removes any danger of overheating any delicate circuitry or component. Joining pins two and three enables pin 19 of the 68000. Early versions of the A500 did not have the J2 jumper in this location - sorry but with the information we have at the moment, you won't be able to fit the new chip.

3. Locate the ram expansion bus connector CNX. Pins one and two are closest to you and pins fifty five and fifty six are furthest away. The odd pins are the lower set. Count up from the bottom pins in pairs until you locate pins forty one and forty two. About 1/8" to the left of these pins is a soldered hole/indentation which has a track running to the rear of the circuit board (see diagram). It runs parallel to the white silkscreen line which designates the CNX expansion. Cut this track carefully with a knife as the silkscreen line sometimes covers a circuit path.

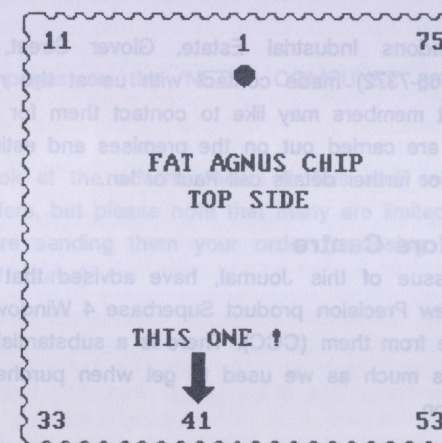
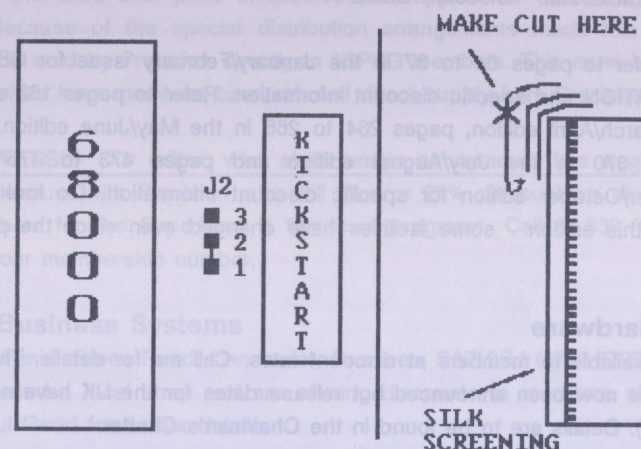
4. Refer to step three and four in the A2000 section above.

Re-boot your machine, enter a SHELL and type AVAIL. You should see anything from 850K to 980K of chip memory at your disposal. This will allow you to have two hi-res 16 colour screens when using DeLuxe PAINT or twice the normal sound sample in memory than you are normally used to !!

Don't worry if you do manage to cut the wrong track. You can undo the damage by carefully using the cold solder fluid as mentioned previously.

These instructions are accurate but I have no control over your actions and cannot be held responsible for any mishaps.

The part number for the new chip is 8372. Bytes & Pieces of Lytham (telephone 0253 734218) can supply the chip. They can also fit and test them for you. There is also a videotape of the installation procedure available.



DISCOUNT CORNER

by John Bickerstaff - Discount Officer

Please refer to pages 64 to 67 in the January/February issue for GENERAL INFORMATION and specific discount information. Refer to pages 162 and 163 in the March/April edition, pages 264 to 266 in the May/June edition, pages 369 and 370 in the July/August edition and pages 473 to 475 in the September/October edition for specific discount information. Do look at the items in this edition - some facilities have changed even since the previous issue.

CBM Hardware

This is available to members at discount rates. Call me for details. The PC50 series has now been announced but release dates for the UK have not been (released). Details are to be found in the Chairman's Chatter.

A.S.C. Computers

of 2nd Floor, 115 Farnons Industrial Estate, Glover Street, Digbeth, Birmingham (phone 021-766-7372) made contact with us at the recent PC Show and suggested that members may like to contact them for repairs to faulty equipment. Repairs are carried out on the premises and estimates are provided free of charge. For further details call Paul or Ian.

Cavendish Commodore Centre

who advertise in each issue of this Journal, have advised that members requiring copies of the new Precision product Superbase 4 Windows for the PC's may purchase these from them (CCC). There is a substantial discount available to members - as much as we used to get when purchases were made directly with Precision.

ICPUG Special Offer.

ICPUG have a few copies of The Manager, a database for Commodore PET 8000 series of computers which comes complete with disk, manual and dongle. Price £5.00 including post and packing. Send your cheque, made payable to ICPUG, plus return label, to John Bickerstaff, 45 Brookscroft, Linton Glade, Croydon, CR0 9NA. This offer applies only to the UK mainland.

Precision Distribution Limited

have appointed certain distributors for their recently introduced product

Superbase 4 Windows. The Recommended Prices are :- £595.00 plus VAT or an upgrade from the GEM program at £295.00 plus VAT. For Networking editions the extra over price of £895.00 plus applies for each 5 user node pack. Because of the special distribution arrangements made this product cannot be sold by Precision directly to ICPUG members. This must be a first, never before have members been refused direct supply from Precision.

STOP PRESS! - Our editor, who shall remain anonymous, has negotiated a direct discount with Precision who will allow a 25% discount on direct sales to members for the Superbase 4 Windows programs. Call 01-330 7166 and quote your membership number.

WCA Business Systems

of 295, Peniel Green Road, Llansamlet, Swansea, SA7 9BJ (0792-772745) have now opened a local shop and are offering discounts to members of ICPUG. Call Paul Gadd for further details.

Discount pages on the 'NETS'- COMPUNET goto ICPUG - MICRONET *ICPUG#

Please look at the advertisements in this and earlier issues for details of special offers, but please note that many are limited in validity so please call them before sending them your order (enclosing your current membership number of course).

READERS WRITE

edited by Brian Fowler

Letters for publication should be sent on disk with accompanying printout to Brian Fowler (address inside front cover). The deadline is one week before the editorial copy date.

First this time, a warning from Peter Wright, 45 Mundon Road, MALDON, Essex. CM9 7JT.

"Re the article by Sgt McNulty in Vol 11 No 5 of the mag. My advice to those wishing to try his modification - don't! I tried it and it does switch ROMs but invariably results in a GURU. Also both disk drives lights remain lit and a boot disk won't (boot that is!)."

Now a challenge to all you Script Plus devotees, from T.A.Sochanik, 12 Cloverlea Rd., Warmley, Bristol ...

"When using Script Plus with the +4 two bugs become quickly apparent:

1. File already exists - Replace Y/N? - with the +4 you cannot replace an existing file. You must save with a new name, then delete the old file.
2. Exit Disk mode, or continue. The only way out of this screen is by pressing ESC three times. BUT on my 64K C16 Script Plus behaves correctly. Any ideas?"

Tony Wright, of 3 Algarth Rise, Stockton Lane, York YO3 0HD isn't too happy about an article in the last Newsletter...

"I seem to be writing to you a lot lately but this letter is not to do with the Super Corner, interesting though it may be, but about Volume 11 Number 5 of the Newsletter.

The contents, as usual, are very readable and I was particularly interested in the article on the Twin Cities 128 compendium as I find the British magazine market has no place for the person who has no interest in games or adventures.

However, I have to say "I sincerely hope not" in reference to the last line of page 471. I welcome the occasional light hearted or humorous approach to our hobby. Indeed, there have been many examples in the past from the Committee and other members. This article/story/? from Mr. Smithwick falls into none of these categories and it is difficult to understand why it was written as it is neither humorous nor informative. Even my 8 year old grandchildren could not raise a smile when they read it, and they are into computers (C64 actually). Mr. Smithwick would also do well to research his story before publishing. The word 'Nirvana' comes from the Sanskrit word nirva 'to blow' and describes the Buddhist state of beatitude which is 'the absorption of individuality into the divine spirit with extinction of personal desires and passions'. Mr. Smithwick was probably thinking of Paradise or Utopia.

It is a great pity that the screen dumps and output from Derek Tilford (page 415) which were left out of the Newsletter were not printed on pages 467-471, they would have been far more interesting."

... Tony then goes on to write about Superbase ...

"I am, at the moment, waiting for a copy of superdesk from the C128 library and am looking forward to the many suggestions it will have in regard to Superbase. Every time I try something new (to me that is) it seems to have the answer.

I run a Railway Golf Society with just under 100 members. I ported the data from another database to Superbase quite easily but with some field alterations. I have now got it nearly to my liking and have found many advantages to having it on Superbase. The records hold not only the names and addresses of the members but their clubs, handicaps, their responses to a questionnaire which details which venue they wish to attend and their meal requirements, the scores they achieved at the various venues and information on subscriptions and attendance at A.G.M. etc.. I am working on a method to output and randomly allocate pairings at the various events, plus a small program to look through the scores and pair the best two of the year for each member. I will let you know how I get on but if, like Derek Tilford's database, my final offering would be of interest I will forward it to you."

Now a plea for HELP from Steve Calkin, 74 Labworth Road, Canvey Island, Essex SS8 7DF, who should have consulted our Discounts Officer ...

"Can you or anyone within ICPUG or its membership help me in making a major decision regarding my Amiga?

I currently own a five year old Epson FX80 9 pin dot matrix printer (reliable, efficient, but not so good on high quality!) and am seriously considering purchasing a replacement. This is where the difficulty sets in. The reasons for requiring a new printer are as follows:

1. Improve quality of letters and documents (important for my business)
2. Allow colour printing of art work (my daughter Gemma reminds me that this is actually top priority!)

I have whittled my choices down to two 24 pin dot matrix printers and two inkjets. These are: The Canon HQ40; NEC P7+; HP Inkjet; XEROX 4020.

I have read a few articles comparing printers and I have even been lucky enough to borrow a NEC from a friend (thanks Paul Duane) but I cannot make a decision without knowing the answers to a few questions:

Does an inkjet printer require (as in MUST have) special paper? Is the paper for an inkjet very expensive? What is an inkjet like for ordinary letter/document printing? Is it possible to remove 'banding' from ribbon printing? Can the 'brightness' and 'contrast' of ribbon printing be improved (pictures always seem to come out much darker than the screen)? What is the output from an inkjet like?

In order to get some answers I wrote (on July 18th) to three suppliers of printers asking for sample outputs and further information. To date I have had no replies at all - not even a courtesy letter of acknowledgement. Needless to say, when I get round to spending my £500 to £1000 it will not be with any of these wasters: Powerhouse Direct, Lan Computer Systems, SK Marketing (thanks for nothing guys!).

If you could help me with any of these points I have raised I would be extremely grateful (and my daughter may at last stop beating me over the head with her Garfield comic).

On a happier note I thought it would be nice to say 'thanks for some good service' for a change (yes, there really are some good suppliers out there - they are just hard to find). Thanks to Bytes and Pieces for a fantastic turn-round a while back when I bought a Spirit board upgrade. Not only did

they deliver the goods within 7 days but they managed to replace a faulty chip (with 2 'just in case') almost before my letter had arrived!

Also thanks to Power Computing for their efforts in replacing my Hard Drive after the recent Novotel computer show."

Finally this time, an apology. Last time I inadvertently typed in David Martin, when I should have typed David Miller. Apologies to both gentlemen for any inconvenience I may have caused. It does go to show the value of sending in your contribution on disk though, doesn't it?

FOR SALE AND WANTED

Editor's note: Copy for small advertisements (no more than six lines please) should be sent to John Bickerstaff (address inside front cover), to arrive at least one week before the editorial copy date. All software advertised must be original. Since space is limited adverts are printed on a strictly first come first served basis.

WANTED

WANTED: Is there anyone within say a 25 mile radius of the Chorley/Preston area from whom I could seek further instruction (but not to advanced level) in the operation of Superbase and Superscript on 128 (or 64)? I will gladly pay for the lessons and travel. Tel. R. Caygill 02572 77564.

WANTED: BBC 'B' Emulator program for C64 urgently wanted, or contact with anyone who purchased one from Lion Computers. J.F. Wickins. Tel. 0492 60258 evenings.

WANTED: Books for C64 on M/code, BASIC programming, especially graphics. Not too expensive. Please send list to Mr. H. Field, The Chimes, Bells Lane, Hoo, Nr. Rochester, Kent. ME3 9HT.

WANTED: Any manuals, instructions, documentation or information on the CBM 710, to buy or borrow (all expenses re-imbursed). Software would be of interest too. Peter Petts, Sindallthorpe House, Prickwillow, Ely, Cambs. CB7 4SJ. Tel. Prickwillow (0353 88) 456.

WANTED: Video digitizer for C64. Contact Joe Quintin, 7 Cotterall Court, Cloverhill, Bowthorpe, Norwich. NR5 9AZ. Phone 0603 746600.

WANTED: User Manual for Script/Plus. Buy or Borrow. Details to Tony Wadsworth, 39 Church Road, Broadbridge Heath, Horsham, Sussex. RH12 3LD. Tel. 0403 66290.

WANTED: Stop Press DTP program and AMX Mouse for the C64/128. Contact Nick Attoe on Hitchin (0462) 456721.

WANTED: Printmaster in original packaging with instructions. Will swap for Simons BASIC Cartridge, as new; or will consider purchase. Ring Michael Pearson on 0789 294978 after 6.30 pm or Sundays.

WANTED: CBM User Manuals for models 2032, 4032 and 8032-SK. Also Amiga programs/files on matrix algebra, fonts (Greek, symbols), maths, etc. G. Thompson, 1 Herbert Road, Hornchurch, Essex. RM11 3LA. Tel. 040 24 40759.

WANTED: Toy Shop Print Utility by Broderbund. Will swap Print Shop or pay reasonable amount. Apply V. Kelly, 33 Yarrow Avenue, Maghull, Merseyside. L31 DDQ.

WANTED: Book Programming The PET/CBM. Asking price to Ian Rees 0945 880856.

WANTED: Help with BBC emulation on the Amiga. Either BBC to Amiga side-by-side, or help with transferring files from 5 1/4" BBC to 3 1/2" Amiga; or copies of 3 1/2" Amiga disks with BBC programmes already on. Contact Bob Harris, Lymington (0590) 683698.

WANTED: Contact with Centronics 737 or 739 printer owner. My machine needs slight adjustment and I need to test it alongside a fully functioning machine. No technical knowledge expected (although not refused of course!), as I have all the technical manuals. Contact Bob Harris, Lymington (0590) 683698.

WANTED: To purchase dead equipment: VIC20, 64, MPS801, MPS803, 1541. Send details to Bob Harris, Holly Oakes, Mill Lane, Pennington, Lymington, Hants. SO41 8LN. Tel. 0590 683698.

FOR SALE

FOR SALE: C64 + 1541 disk drive and tape deck £325 or offers. Plenty of software and books - send for list. Roland Warburton, 124 Oaklands Avenue, Oxhey, Watford, Herts. WD1 4LQ. (0923 34800).

FOR SALE: Commodore MPS803 Dot Matrix Serial Printer. CBM dedicated. Single sheet feed with the option for tractor feed. Mint condition, all original including lead, manual and makers box. Plug in ready to run £90. Tel. Mike Benn 059 12 242 Daytime and W/E.

FOR SALE: Various bits and pieces for C64 inc. JCL I.E.E.E. interface cartridge £20, Expert cartridge £15, Music expansion system £60. Software (mostly disk), some business, some games, some music. Various books (some technical) both on C64 and 1541 disk drive (all roughly half-price). Tel. Alan 0443 450047 (evenings) 0443 480480/2189 (work).

FOR SALE: Commodore Bits, big and small. Hardware, from a C128 system (300) to a PET 4040 (175). Software, Forth cartridge to games. Sae for list. Offers considered. Contact D.R. Baxter, 134 Derby Road, Loughborough, Leics. LE11 OHL.

FOR SALE: 8280 dual 8 inch disc drive providing 1.8MB of storage, parallel interface for C64 or C128. Includes box of 8 inch discs, any offers. 1571 disc drive and many 5.25 inch discs, £90 ono. Andrew Thomson, Hazlemere, High Wycombe, 0494 711223. I don't get home 'till 6.15pm.

FOR SALE: Commodore 3040 double disc drive, 4032 computer and external cassette model C2N. Any offers to R. Patey, 63 Wooteys Way, Alton, GU34 2JN. Phone days 073 087 249, evenings 0420 86133.

FOR SALE: PC Sidecar (512k) for Amiga 1000. Excellent condition. Quick sale needed £150. Also Oxford Pascal for C128 £10. Tel Dr. R. Roberts. 01 987 6894 evenings or 01 377 7000 ext 2656 day.

FOR SALE: C128, 1570, 1525, C2N Cassette, Mono Monitor, Quickdisc+, Petspeed Compiler plus assorted books and programs. £350. Call R. Higson on 061 790 7673.

FOR SALE: CBM 1901 colour monitor for CBM 128 or PC (80 column CGA) £100. Also PET-I.E.E.E. and I.E.E.E.-I.E.E.E. cables £8 each. Phone Peter Reynolds on 0892 26016, or write to 65 Claremont Road, Tunbridge Wells, TN1 1TE.

FOR SALE: Commodore 128D, 1901 colour monitor, 1526 printer, joystick, Commodore modem and viewdata S/W, CP/M discs and books. Some software, Easyscript, Easyfile, Swift spreadsheet and games, all in excellent condition. £450 ono. Phone 0533 394477 or write Chris Forrest, 77 Beechwood Avenue, L.F.E., Leicester, LE3 3PN.

FOR SALE: CBM 128D (portable), ROM & Video RAM upgrades, 512K RAM Expansion, Mono Monitor, Mouse, DPS1101 Printer, 3-1/2" Disk Drive, Full Music Expansion System plus other peripherals. Vast array of CP/M, C128, C64 Software, books. System no longer required as user fully committed to DOS. Offers in region £700. May split. Buyer collects. SAE for complete spec to M. Rose, 103 Ferny Road, East Barnet, Herts. EN4 8LB.

FOR SALE: CBM 128D PC Internal disk drive, Juki 6100 Daisywheel Printer, CBM MPS1000 Dot Matrix Printer, Video Monitor 1901, CBM VIC20 with tape deck & joystick. Numerous software, including Superscript, Vizawrite & many additional utilities, educational & games software. Accumulation of leads, spares, manuals & extra chips. £550. Doug Coombes, 47 Chippers Road, Worthing. Tel. 0903 66503.

FOR SALE: Amiga 2000, twin internal 3-1/2" disk drives, fitted with 20MB hard disk (needs controller card). Excellent condition. £900 (interest free credit possible). Phone Mike Reynolds 0622 676354.

FOR SALE: Commodore 8092 (64k memory, toolkit) with 8050 twin disc drive, Commodore 3022 printer. Offers around £120 complete, or willing to split. Tel. Robert Bowman 01 578 5714 (Greenford, Middlesex).

FOR SALE: C64 and C128 games, all originals boxed with instructions. Over 50 titles including cassettes and diskettes. Send sae for list. Titles include Music Maker '128, Outrun, Strip Poker, Beach-Head II, Art Studio, Busicalc etc. Iain Hawker, 1 Solway Place, Holm Street, Moffat, DG10 9EB.

FOR SALE: CBM 8296 (The last of the PETS with tilt/swivel monitor and detachable keyboard), 2031 disk drive and 4022 printer, all in excellent condition with spare 2031 disk drive (not working). £180 or offers. Tel. David Pye, 051 644 0205 evenings (Merseyside).

FOR SALE: Stack C64 to centronics cable and software £9. York Electronics RS232 cable/interface (C64 to Amiga) £12. Amiga word processor Scribble II, complete in box, unused £15. Tel. David Pye, 051 644 0205 evenings (Merseyside).

FOR SALE: 64 Software: Simons BASIC Cartridge, Pet Emulator, Assembler, M.U.L.E. Bards Tale, Lord of the Rings, The Hobbit, Alternate Reality, Shard of Spring, etc. etc. All on disk £2 - £10 can post. Also some boxes of blank discs branded £5 per box. P. Stenning, 84, Oakley Lane, Basingstoke, RG23 7JX. Tel. 0256 781013.

FOR SALE: For C64/128 Speech on disk £3. The advanced and OCP art studio on 2 tapes £10. Golf Construction Set on 2 tapes £5. Wizball on tape £2. World Tour Golf on disk £5, etc. For Amiga The Munsters game £8, Test Drive car simulation £8, etc. Contact Mr. H.A. Burrin, 16 Carlton Avenue, Gillingham, Kent, ME7 2JU. Phone 0634 52505.

FOR SALE: Falcon F16 and Sublogic's Jet for Amiga. Phone David Johnson 0754 66629.

FOR SALE: Unwanted Amiga Software - Various programs, including Carrier Command £8, Elite £8, DeLuxe Photolab £29, Ferrari Formula One £8, Star Glider 2 £8, plus others. Phone John Hellingsworth on Cambridge (0223) 861703 for details.

FOR SALE: 8 Books by First Publishing (M/code, Advanced M/code, Ideas, Peeks & Pokes, Graphics, Anatomy of C64, Tricks & Tips, Datasette) £12 the lot. DIY Robotics & Sensors £3.50. Introducing C64 M/code £4. C64 Getting the most from it £3.50. All inc. p & p. David Bousfield, West Hayes, Sheepscombe, Stroud, Glos. G16 7RL. Tel. 0452 813336.

FOR SALE: 1541 £50. MPS801 (Datel Font Chip plus original ROM) £35. 1520 Plotter (non-working) £5. Centronics Interface (almost new) £28. Torjan Light Pen £10. Plus lots of books and some software. Send sae for list. Also OU Course "Structured Programming in UCSD Pascal" complete £35. Malcolm Gallon, 3 Farburn Drive, Stonehaven, AB3 2BZ. Tel. 0569 65615.

FOR SALE: Small quantity Rotronics DR2301 Data Recorders. Replacement for C2N or can be used also as standard voice recorder or data cassette for Spectrum, BBC etc. £10 inc. p & p. I. Rees, 28 Postmill, Fairstead, King's Lynn, Norfolk. PE30 4QY. Tel. 0945 880856.

FOR SALE: Expert Cartridge with V3.2R software £18. C64 Programmers Reference Guide vgc £4. EASY (Wordstar) PC Wordprocessor £7. Bob Harris. Tel. Lymington (0590) 683698.

ICPUG SOFTWARE LIBRARIES

Organiser: Joe Griffin, Clovelly, Lynwick St, Rudgwick, Horsham, Sussex RH12 3DJ

Please remember that the libraries are operated on an entirely voluntary basis and unlike many of the American User Groups, ICPUG DOES NOT CHARGE A COPYING FEE.

The Libraries contain PUBLIC DOMAIN programs from a wide range of sources, including our own members and other user groups. WE DO NOT SUPPORT SOFTWARE PIRACY.

Members may obtain ALL the library material. In order to retain a measure of control over the work-load imposed on the copiers however, we do restrict the amount of material which can be obtained from any one request.

Disk users may obtain up to two disk copies at a time (Amiga: five).

Tape users may obtain up to four programs from any one disk.

(Please use a C-60 or C-90 tape; a C-15 may be too short.)

For ALL libraries (except VIC) a catalogue disk is available, containing a list of the library contents. PRINTED CATALOGUES ARE NOT AVAILABLE.

To obtain copies of catalogue or library disks, please send:

A statement of what you want.

Your membership number (We cannot provide the service without it).

Disks (STATING format [type of drive] required) or tape (C-60 or C-90). We will not use a disk as a 'floppy' as it can damage the disk drive.

Pre-Addressed reusable packaging suitable for return (there have been occasions when disks have arrived bent in half! Please ensure the packaging is adequate.)

Return postage - SEND STAMPS. (Overseas members should send International reply Coupons. Allow Surface: 1.5 IRCs, Air: 2.5 IRCs per disk sent please.)

PET Joe Griffin (see above)

VIC Tape & 1540/1541. Copies from David Miller (See C64 Library)
8050/8250 format only from Joe Griffin (see above)

COMAL Brian Grainger, 73 Minehead Way, Stevenage, Herts, SG1 2HZ.

1520 PLOTTER W.G.C. Austin, School of Geography, Faculty of Humanities, Newcastle Polytechnic, Lipman Building, Sandyford Road
Newcastle Upon Tyne, NE1 8ST.

1520 (Tape) John Bentley, 38 Conway Road, Taplow, Maidenhead, SL6 0LD

PC Organiser: Don Skene, 307 Queen's Road, Maidstone, Kent, ME16 0JN
Please send your requests to the copier listed below who deals with disks in your required format. Each librarian holds the complete catalogue disk in his own format.

360K - Pete Crowder, 27 Crawford Drive, Liverpool, L15 8AE

720K - David Harrow, 28 Phoenix Drive, Wateringbury, Maidstone, ME18 5DR

1.2M - John Robinson, 5 Alba Close, Silica Lodge, Scunthorpe, DN17 2XD

Plus/4 & C16 Organiser Richard Hunt 45 Cumberland Rd, Bromley, BR2 0PL
Send requests to the copier who deals with the first letter of your name.

A-M plus all tape requests - Richard Hunt (see above)

N-Z Joe Shirras, High View, 69 Igten Road, Burnley, Lancs, BB12 0HP

C-64 Organiser: David Miller, 38 Exeter Gardens, Ilford, Essex, IG1 3LB
Send requests to the copier who deals with the first letter of your name.

A-C Joe Quintin, 7 Cotterhall Ct, Clover Hill, Bowthorpe, Norwich NR5 9AZ

D-H Roger Mather, 138 Clensham Lane, Sutton, Surrey, SM1 2NG

I-M James Mason, 35 Woodburn Drive, Dalkeith, Midlothian, EH22 2AZ

N-R Norman Wright, 73 Queens Road, Littlestone, New Romney, TN28 8LS

S-Z M J Mann, 502 Dereham Road, Norwich, Norfolk, NR5 8TU

Tape Joe Quintin (see above)

Overseas & 8050/8250 Joe Griffin (see above)

128 Organiser: Chris Wright, 37 Cecil Street, Lytham, Lancs, FYE 5NN
Send requests to the copier who deals with the first letter of your name.

A-C Bill Gardner, 12A Wayside Acres, Codsall, Wolverhampton, WV8 2BS

D-R Robert Daly, 6 Derwent Crescent, Clitheroe, Lancs, BB7 2PW

S-Z Dave Tew, 4 Ascombe Cresc, Hambrook Pk, Charlton Kings, Cheltenham, Glos, GL52 6YH

Overseas (All): Derek Clifford, 36 Hanover Avenue, Feltham, TW13 4JW

1581 requests to Bob Daly (see above)

128 Bulletin Board on 0902-745337 (24 Hrs; also for PC users)

AMIGA Organiser Peter Miles, The Queens Armes Hotel, Charmouth, Dorset.

Write to him with/about your programs. Disk copies should NOT be requested from the organiser.

Amiga disk copiers: [Not more than five disks at one time] Specific ICPUG Disks and the catalogue of Read-Me files (ie. contents) for these. Send your request to the copier below who deals with the first letter of your surname.

A-D David Annal, P.O Box 42, London, SW16 5HJ

E-K Peter Reeve, 2 Court Road, Tunbridge Wells, Kent, TN4 8ED

L-R David Flint, 24 Hawthornden Avenue, Uttoxeter, Staffs, ST14 7NZ

S-Z Chris Wright (see C-128 above)

Public Domain (Non-ICPUG)

Amicus disks and the catalogue of Read-Me files (ie. contents) for these may be obtained solely from:

Ken Turner, 9 Thirlmere Court, Keswick Walk, Lancaster, Lancs. LA1 3LQ

Fish disks and the catalogue of Read-Me files (ie. contents) for these. Send your request to the copier listed below who deals with the first letter of your surname. Catalogue now on two disks.

A-K Eddie Moore, 4 Gosling Close, Hatton, Warrington, Cheshire, WA4 5PB

L-Z John Grove, The Cobnuts, Cobs Close, Ightham, Sevenoaks, TN15 9DB